C Overview table and test sheets

This on-line file is related to the EPFL thesis 8090 (doi:10.5075/epfl-thesis-8090) and presents the experimental sheets and results for the chamfered, rounded and 2-chamfered orifices (starting at page 4). Furthermore, an overview table is given by Table C.1.

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Table C.1 – Overview table sorted with descending highest head loss coefficient

Orifice	Highest head loss coefficient	Lowest head loss coefficient
EXP016	92.4	29.6
EXP003	89.5	43.5
EXP015	46.7	21.3
EXP002	42.8	31.7
EXP010.5	32.9	18.5
EXP020	32.9	8.6
EXP021	32.7	9.1
EXP019	32.4	8.6
EXP014	31.9	9.0
EXP023	31.5	12.6
EXP011	31.5	18.2
EXP012	31.5	20.1
EXP025	31.3	16.4
EXP009	31.0	24.6
EXP022	30.8	8.0
EXP007	30.6	10.6
EXP008	30.6	10.5
EXP010	30.1	12.7
EXP024	30.0	13.0
EXP001	29.4	18.2
EXP013	29.0	20.5
EXP006	26.9	26.2
EXP048	26.4	16.8
EXP032	26.2	12.5
EXP049	23.9	18.6
EXP033	23.4	10.2
EXP035	22.9	14.6
EXP055	21.8	17.7
EXP053	21.8	17.4
EXP054	21.7	21.2
EXP030	21.2	15.0
EXP034	20.9	13.6
EXP037	20.4	13.7
EXP052	20.4	18.5
EXP044	19.5	11.8
EXP031	19.3	10.8
EXP027	18.9	12.3
EXP047	18.8	11.1
EXP026	18.2	17.2
EXP029	17.6	10.5
EXP005	17.4	12.7
EXP018	17.3	7.5
EXP028	16.6	11.1
EXP039	16.2	13.4

Orifice	Highest head loss coefficient	Lowest head loss coefficient
EXP038	14.9	13.1
EXP043	14.6	11.2
EXP046	14.1	9.4
EXP017	13.8	3.5
EXP051	13.7	11.0
EXP050	13.4	10.3
EXP045	12.3	11.5
EXP004	11.8	6.8
EXP036	10.7	10.4
EXP041	10.6	7.6
EXP040	10.6	9.6
EXP042	10.6	12.0

Orifice : **EXP_001**

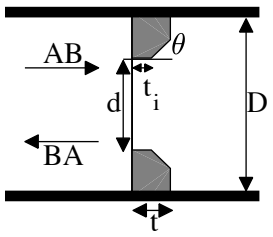
Type : chamfered orifice

Head loss coefficients

k_{AB}	29.4 ±0.46
k_{BA}	18.2 ±0.16
λ	0.64

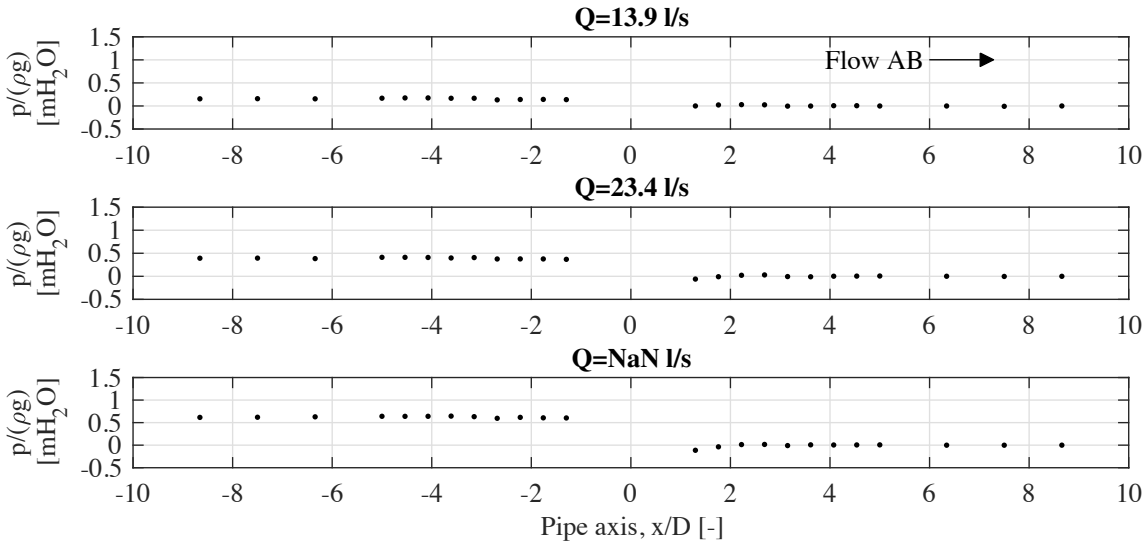
Jet length

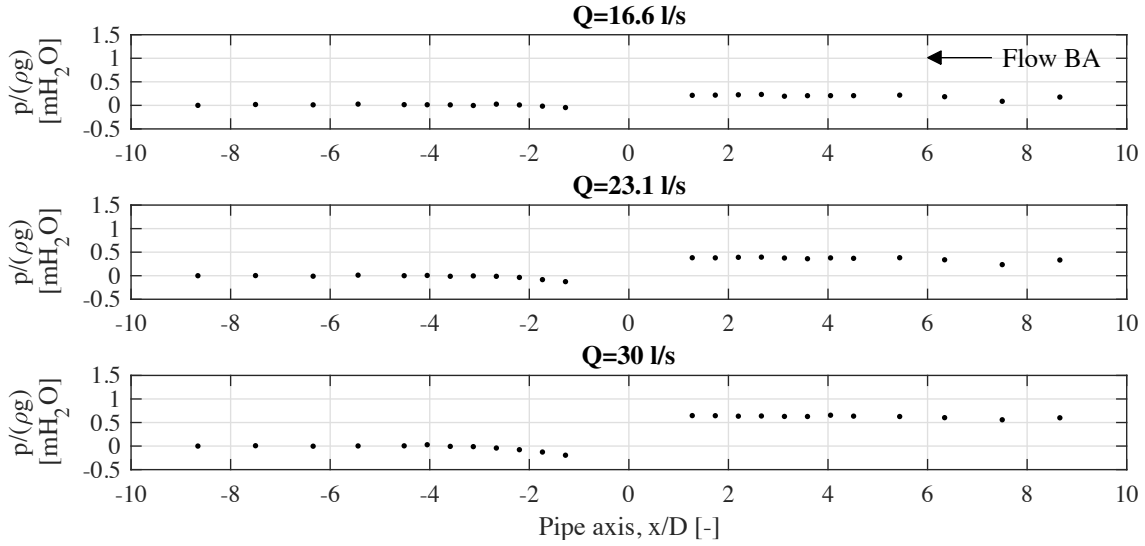
$L_{j,AB}$	3.97
$L_{j,BA}$	4.47

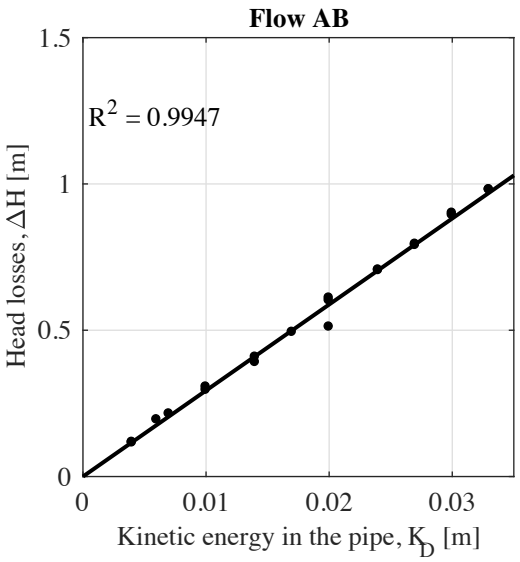


Geometrical parameters

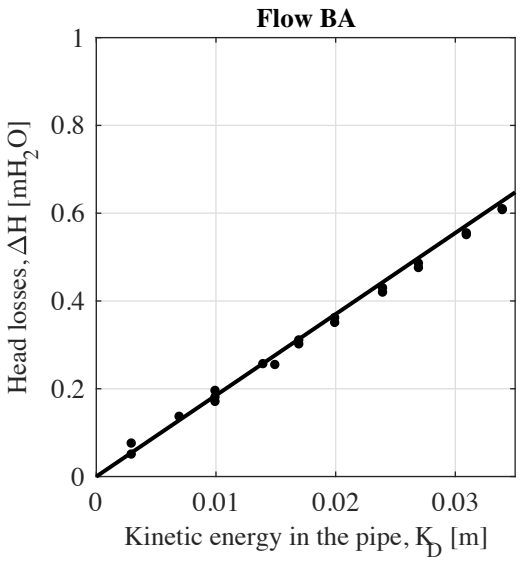
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.117
9.8	0.004	0.115
13.0	0.006	0.194
13.4	0.007	0.214
16.1	0.010	0.295
16.3	0.010	0.306
18.9	0.014	0.390
18.9	0.014	0.408
20.9	0.017	0.493
22.7	0.020	0.511
23.1	0.020	0.601
23.1	0.020	0.610
24.9	0.024	0.706
25.1	0.024	0.704
26.5	0.027	0.790
26.6	0.027	0.794
28.2	0.030	0.900
28.3	0.030	0.893
29.6	0.033	0.980
29.6	0.033	0.980



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.049
9.4	0.003	0.064
13.3	0.007	0.128
16.3	0.010	0.171
16.3	0.010	0.189
16.6	0.010	0.183
19.1	0.014	0.239
19.7	0.015	0.259
21.1	0.017	0.312
21.4	0.017	0.308
22.8	0.020	0.363
23.1	0.020	0.359
25.0	0.024	0.431
25.1	0.024	0.428
26.7	0.027	0.490
26.7	0.027	0.498
28.5	0.031	0.567
28.7	0.031	0.564
30.0	0.034	0.623
30.0	0.034	0.624

Orifice : **EXP_002**

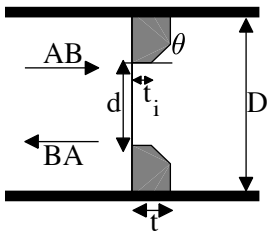
Type : chamfered orifice

Head loss coefficients

k_{AB}	42.8 ±0.59
k_{BA}	31.7 ±1.03
λ	0.74

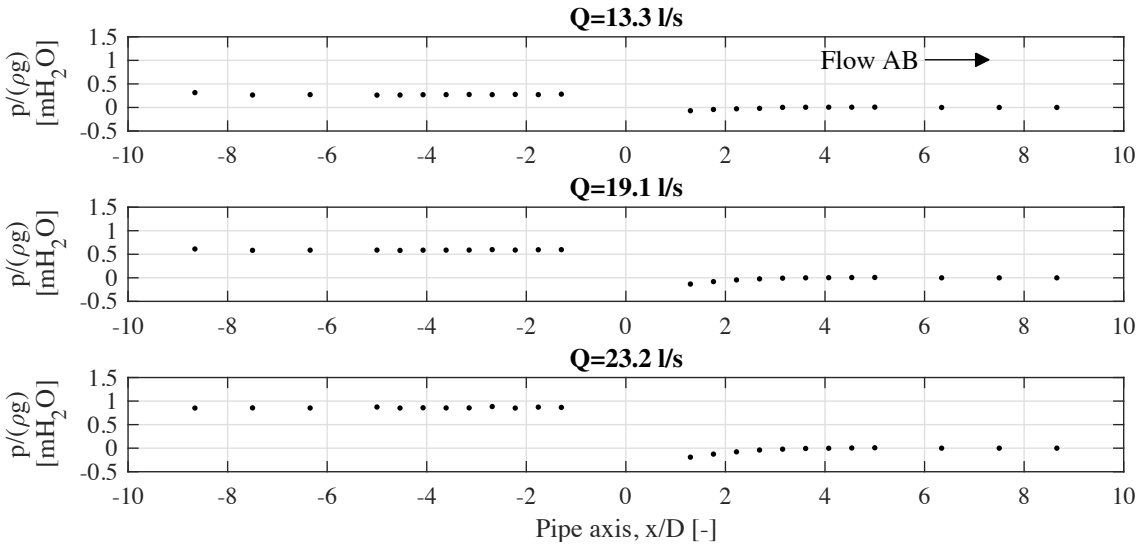
Jet length

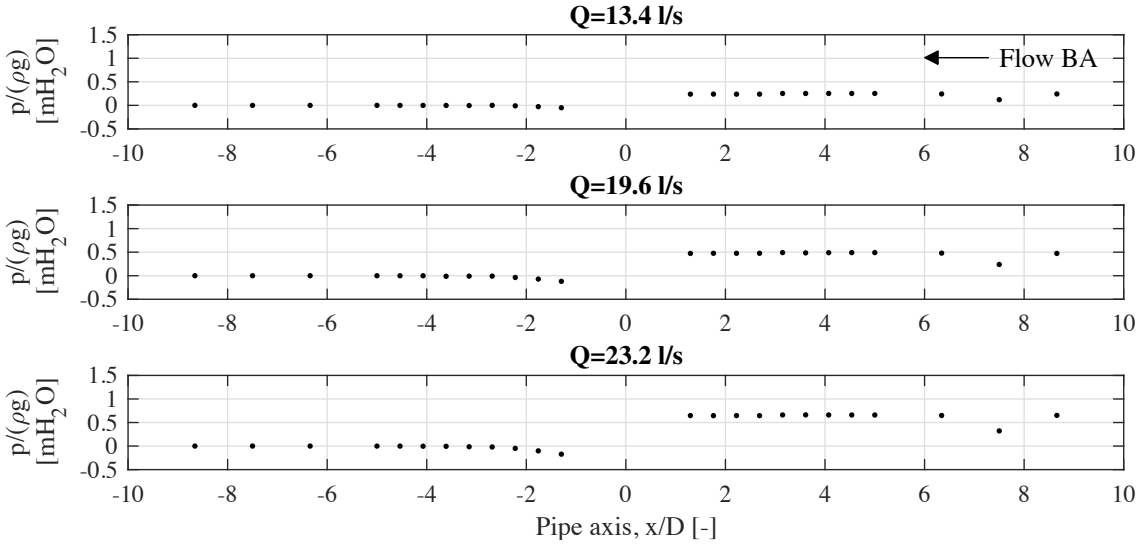
$L_{j,AB}$	3.79
$L_{j,BA}$	4.18

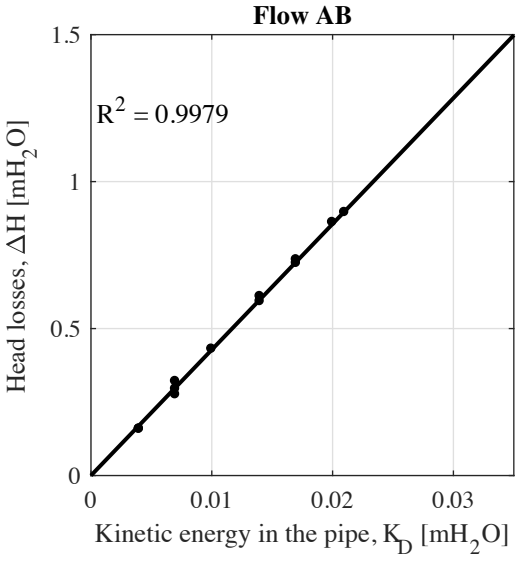


Geometrical parameters

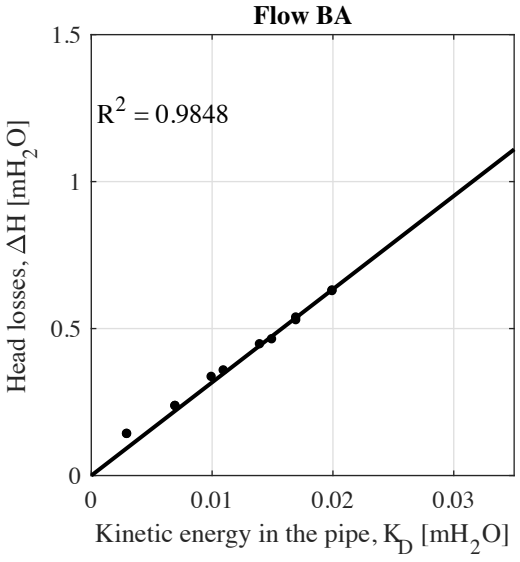
d	96.3	[mm]	β	*0.446*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
10.1	0.004	0.158
10.1	0.004	0.158
13.3	0.007	0.275
13.5	0.007	0.294
14.0	0.007	0.32
16.3	0.01	0.43
19.1	0.014	0.592
19.2	0.014	0.609
21.0	0.017	0.722
21.3	0.017	0.734
23.2	0.02	0.861
23.5	0.021	0.895



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.140
9.5	0.003	0.140
13.4	0.007	0.235
13.4	0.007	0.235
16.4	0.010	0.334
17.0	0.011	0.356
19.2	0.014	0.445
19.6	0.015	0.462
21.1	0.017	0.527
21.3	0.017	0.536
23.1	0.020	0.628
23.2	0.020	0.626

Orifice : **EXP_003**

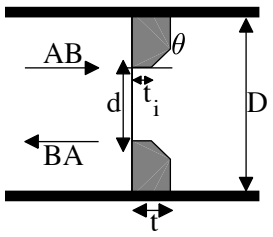
Type : chamfered orifice

Head loss coefficients

k_{AB}	89.5 ±0.59
k_{BA}	43.49 ±0.74
λ	0.49

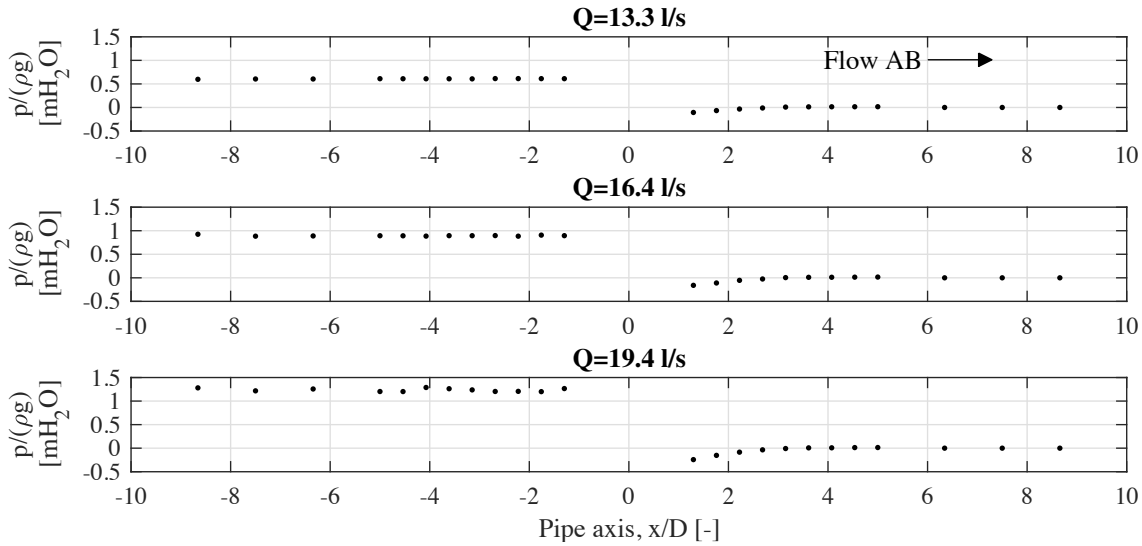
Jet length

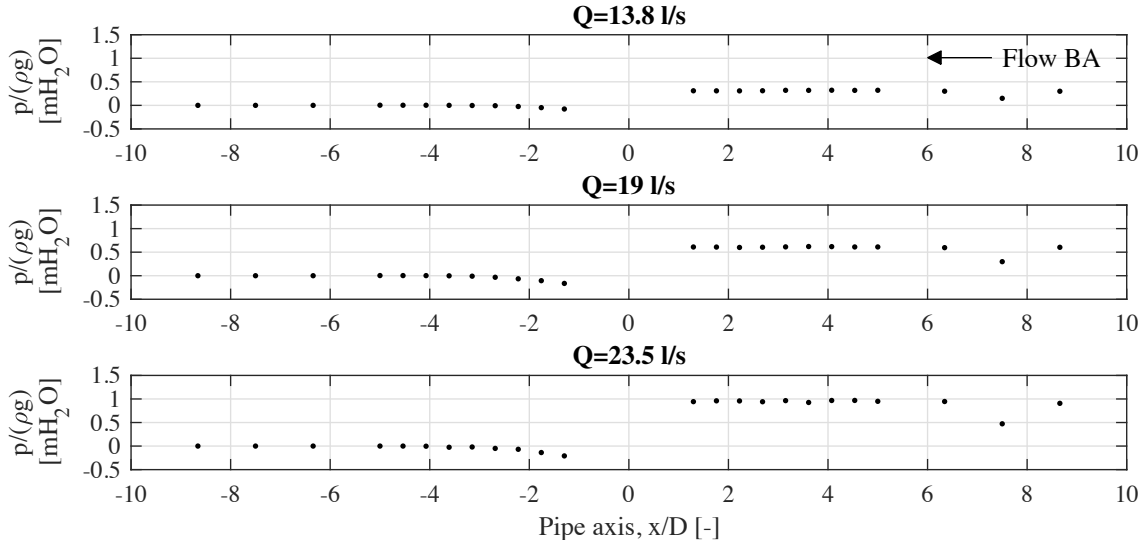
$L_{j,AB}$	4.03
$L_{j,BA}$	4.16

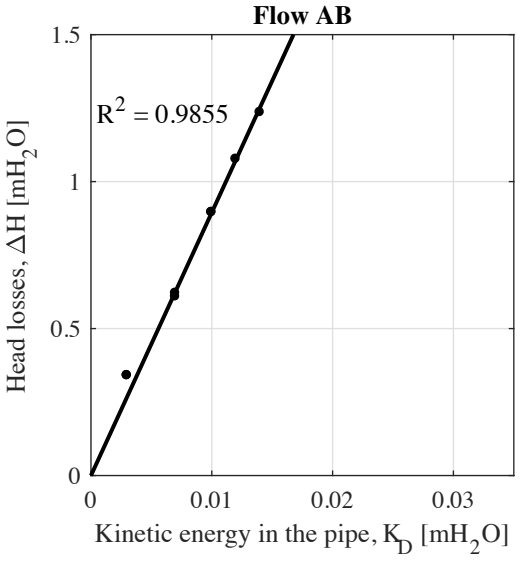


Geometrical parameters

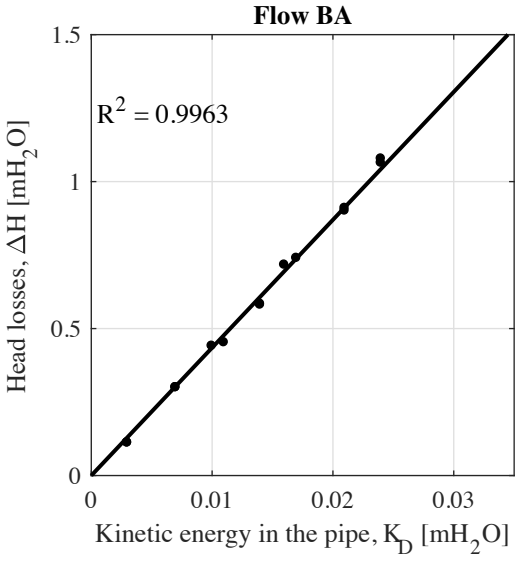
d	85.6	[mm]	β	*0.396*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.340
9.6	0.003	0.340
13.3	0.007	0.608
13.4	0.007	0.620
16.4	0.010	0.895
16.4	0.010	0.895
18.1	0.012	1.076
19.4	0.014	1.235



Q [l/s]	K_D [m]	ΔH [m]
9.3	0.003	0.111
9.3	0.003	0.111
13.8	0.007	0.299
13.8	0.007	0.299
16.5	0.010	0.440
16.7	0.011	0.452
18.9	0.014	0.580
19.0	0.014	0.583
20.7	0.016	0.716
21.2	0.017	0.739
23.3	0.021	0.900
23.5	0.021	0.909
25.2	0.024	1.063
25.3	0.024	1.077

Orifice : **EXP_004**

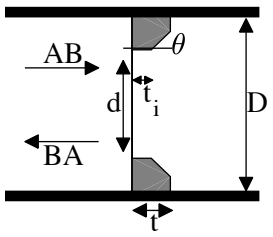
Type : chamfered orifice

Head loss coefficients

k_{AB}	11.8 ±0.17
k_{BA}	6.8 ±0.15
λ	0.58

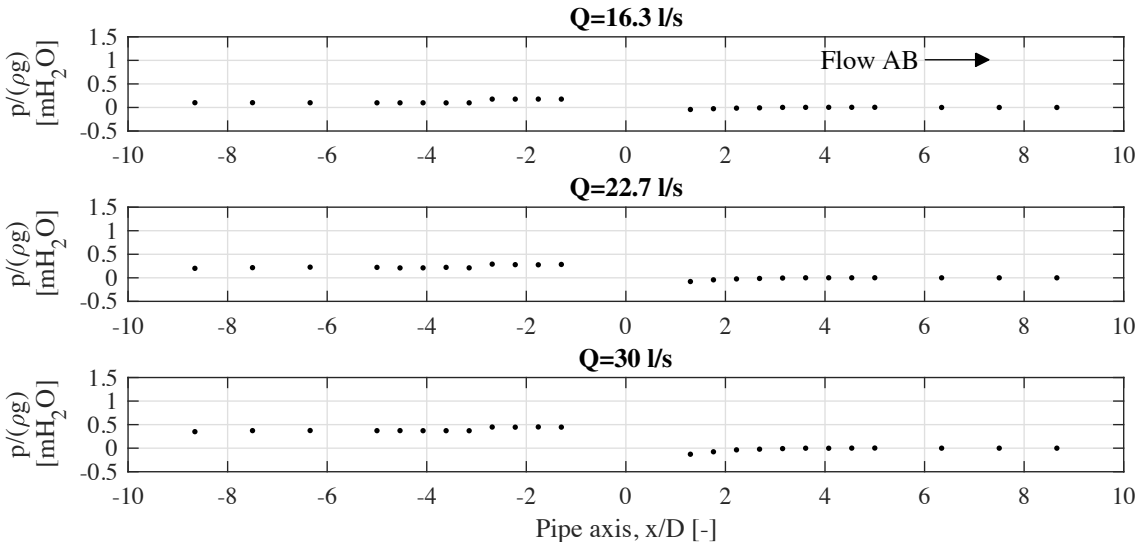
Jet length

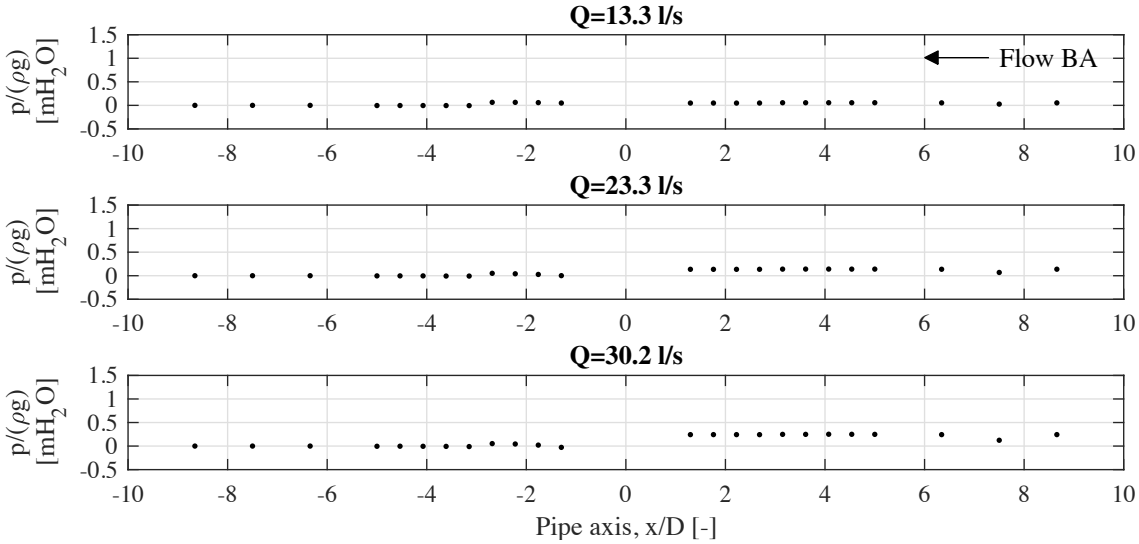
$L_{j,AB}$	4.44
$L_{j,BA}$	4.57

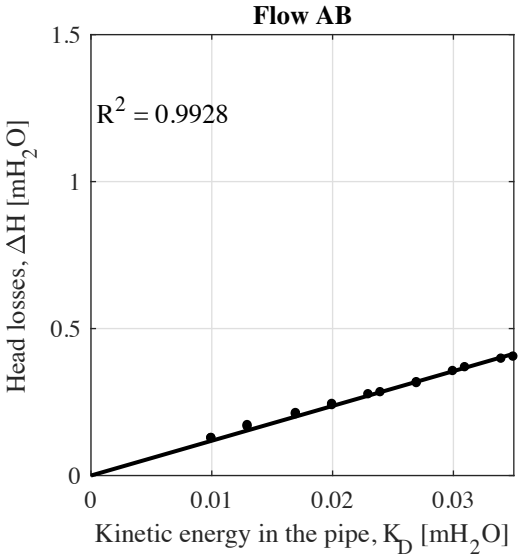


Geometrical parameters

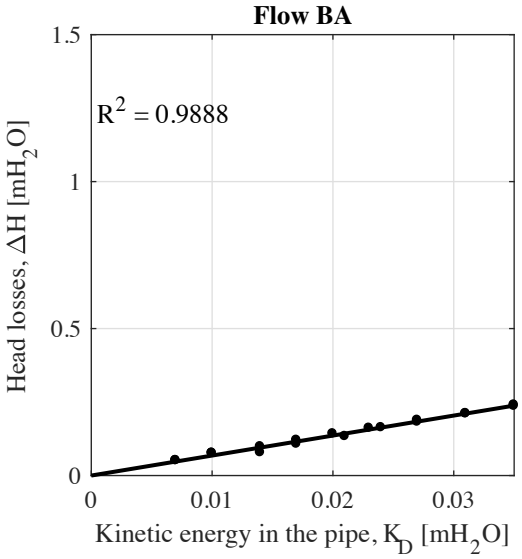
d	128.4	[mm]	β	*0.594*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
16.3	0.010	0.126
16.3	0.010	0.126
18.6	0.013	0.170
18.8	0.013	0.165
21.2	0.017	0.211
21.3	0.017	0.207
22.7	0.020	0.238
23.1	0.020	0.242
24.7	0.023	0.275
25.0	0.024	0.282
26.5	0.027	0.313
26.6	0.027	0.316
28.3	0.030	0.354
28.8	0.031	0.367
30.0	0.034	0.396
30.2	0.035	0.403



Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.051
13.3	0.007	0.051
16.6	0.010	0.076
16.6	0.010	0.076
18.9	0.014	0.078
19.1	0.014	0.098
21.1	0.017	0.107
21.2	0.017	0.120
23.2	0.020	0.142
23.3	0.021	0.133
24.8	0.023	0.161
25.4	0.024	0.163
26.8	0.027	0.182
26.9	0.027	0.188
28.5	0.031	0.211
28.6	0.031	0.210
30.2	0.035	0.236
30.5	0.035	0.240

Orifice : **EXP_005**

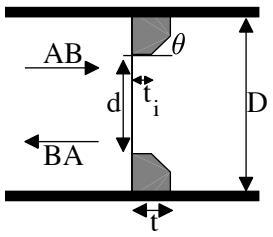
Type : chamfered orifice

Head loss coefficients

k_{AB}	17.4 ±0.16
k_{BA}	12.7 ±0.34
λ	0.73

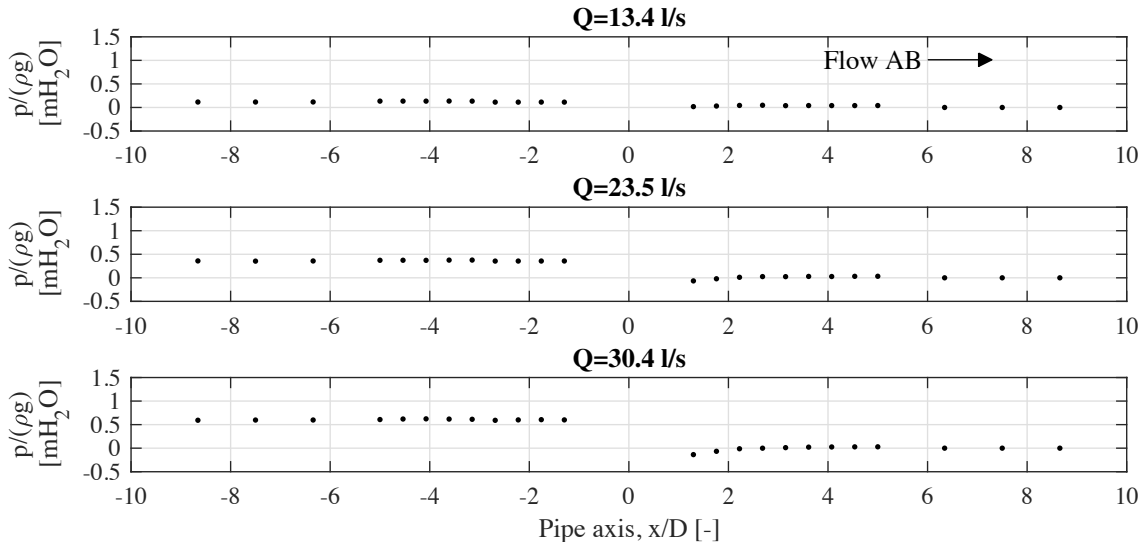
Jet length

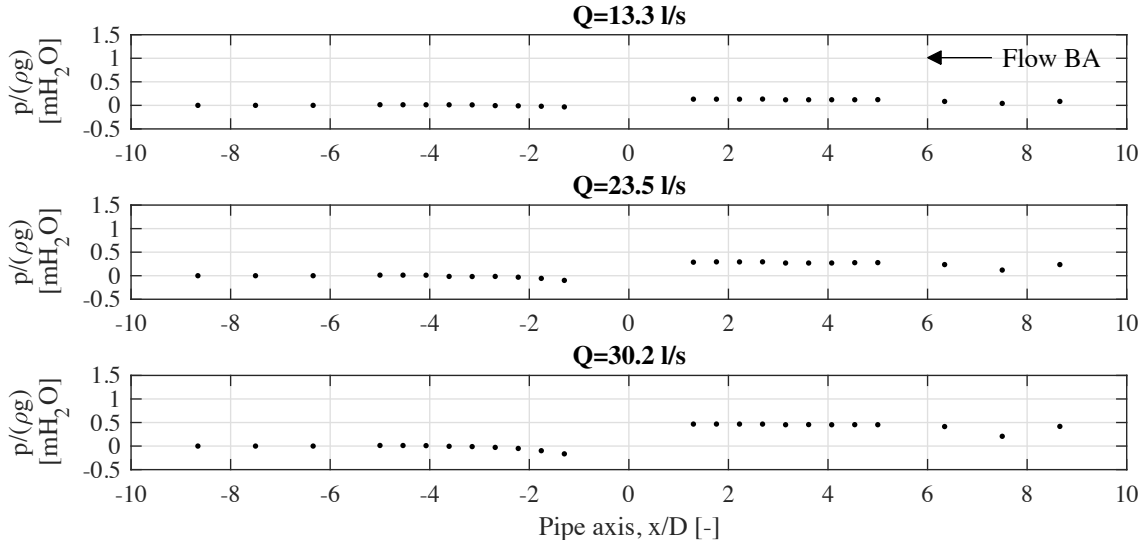
$L_{j,AB}$	4.24
$L_{j,BA}$	4.36

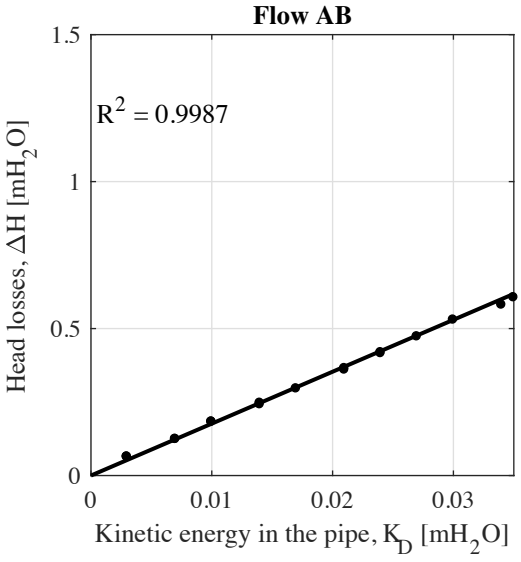


Geometrical parameters

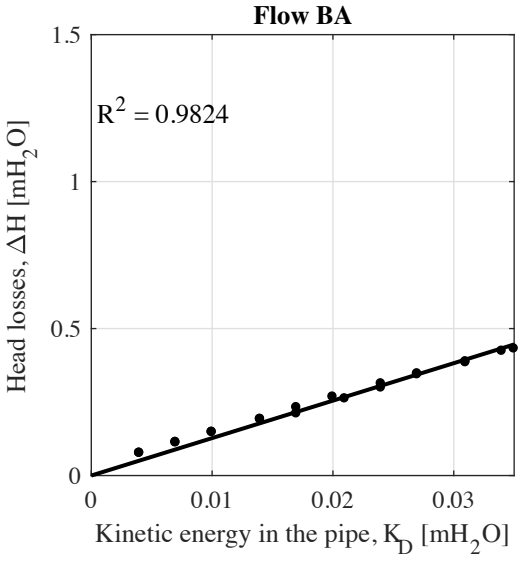
d	117.7	[mm]	β	*0.545*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.063
9.5	0.003	0.063
13.4	0.007	0.123
13.4	0.007	0.123
16.4	0.010	0.182
16.4	0.010	0.182
19.1	0.014	0.241
19.1	0.014	0.246
21.3	0.017	0.295
23.3	0.021	0.359
23.5	0.021	0.364
25.2	0.024	0.415
25.2	0.024	0.418
26.8	0.027	0.472
28.3	0.030	0.529
29.9	0.034	0.580
30.4	0.035	0.605



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.076
9.7	0.004	0.076
13.3	0.007	0.111
13.5	0.007	0.113
16.1	0.010	0.147
16.1	0.010	0.147
19.0	0.014	0.191
19.0	0.014	0.191
21.0	0.017	0.210
21.3	0.017	0.231
23.2	0.020	0.267
23.5	0.021	0.261
25.1	0.024	0.298
25.3	0.024	0.312
26.8	0.027	0.346
26.9	0.027	0.343
28.4	0.031	0.384
28.4	0.031	0.387
29.9	0.034	0.423
30.2	0.035	0.431

Orifice : **EXP_006**

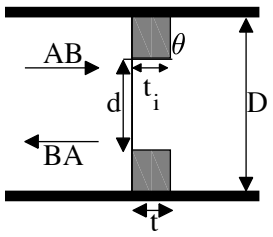
Type : chamfered orifice

Head loss coefficients

k_{AB}	26.2 ±0.28
k_{BA}	26.9 ±0.34
λ	0.97

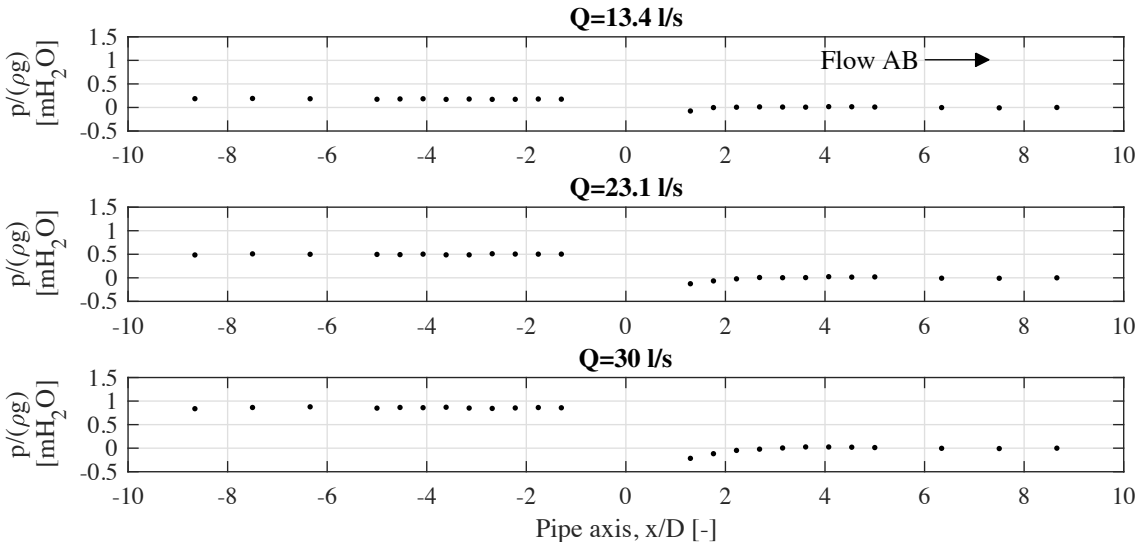
Jet length

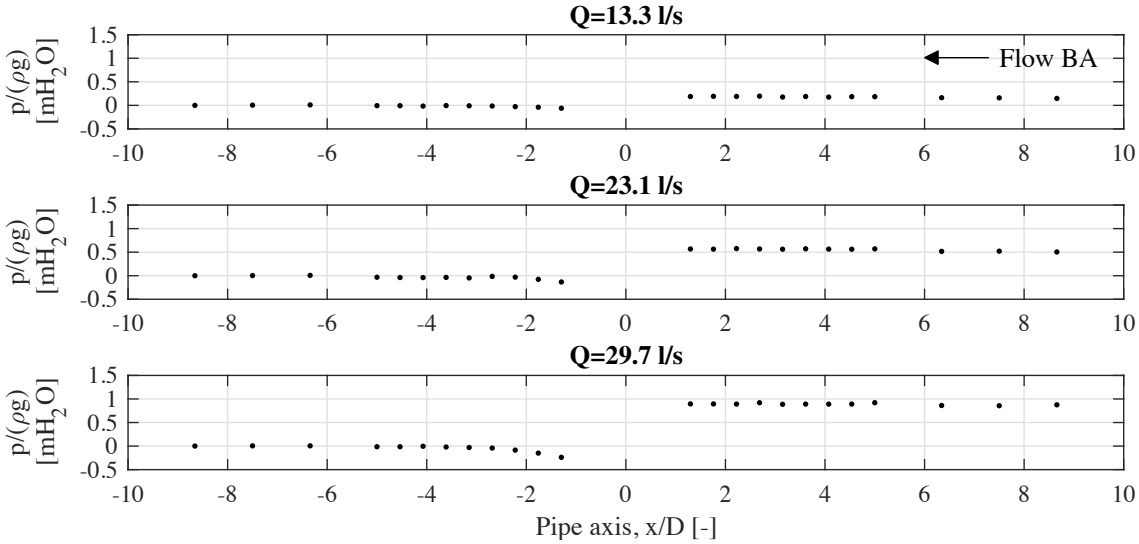
$L_{j,AB}$	4.25
$L_{j,BA}$	4.62

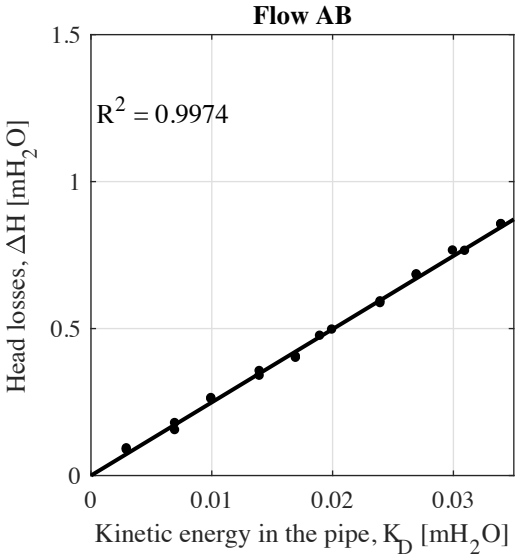


Geometrical parameters

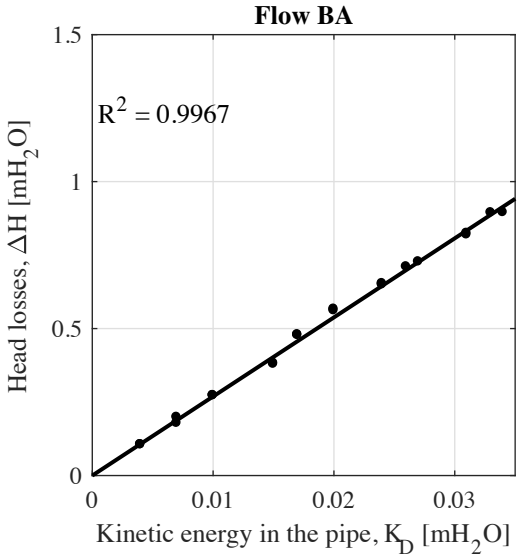
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	43.0	[mm]	α_i	*0.099*	*[-]*
			θ	0	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.091
9.5	0.003	0.086
13.1	0.007	0.153
13.4	0.007	0.177
16.3	0.010	0.259
16.3	0.010	0.262
19.1	0.014	0.338
19.1	0.014	0.354
20.9	0.017	0.403
20.9	0.017	0.399
22.5	0.019	0.474
23.1	0.020	0.495
24.9	0.024	0.585
25.2	0.024	0.591
26.5	0.027	0.683
26.8	0.027	0.680
28.3	0.030	0.764
28.4	0.031	0.763
29.9	0.034	0.854
30.0	0.034	0.853



Q [l/s]	K_D [m]	ΔH [m]
10.2	0.004	0.105
10.2	0.004	0.105
13.3	0.007	0.178
13.4	0.007	0.198
16.5	0.010	0.272
16.6	0.010	0.272
19.6	0.015	0.379
19.7	0.015	0.382
21.0	0.017	0.477
21.1	0.017	0.479
23.1	0.020	0.566
23.1	0.020	0.561
25.0	0.024	0.649
25.1	0.024	0.653
26.4	0.026	0.710
26.7	0.027	0.727
28.5	0.031	0.824
28.6	0.031	0.819
29.7	0.033	0.894
29.8	0.034	0.895

Orifice : **EXP_007**

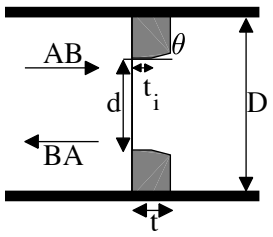
Type : chamfered orifice

Head loss coefficients

k_{AB}	30.6 ±0.45
k_{BA}	10.6 ±0.14
λ	0.35

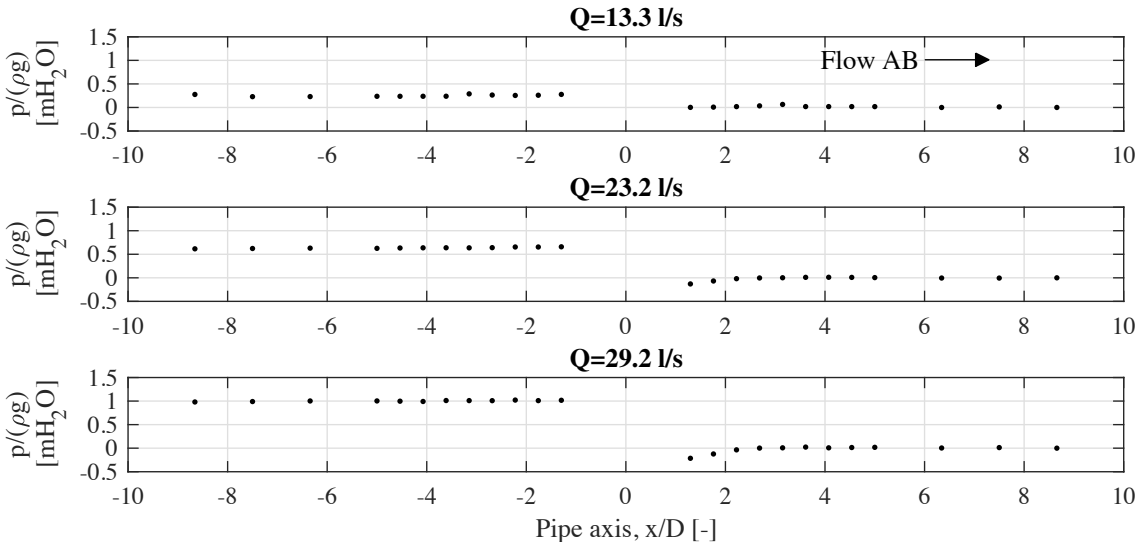
Jet length

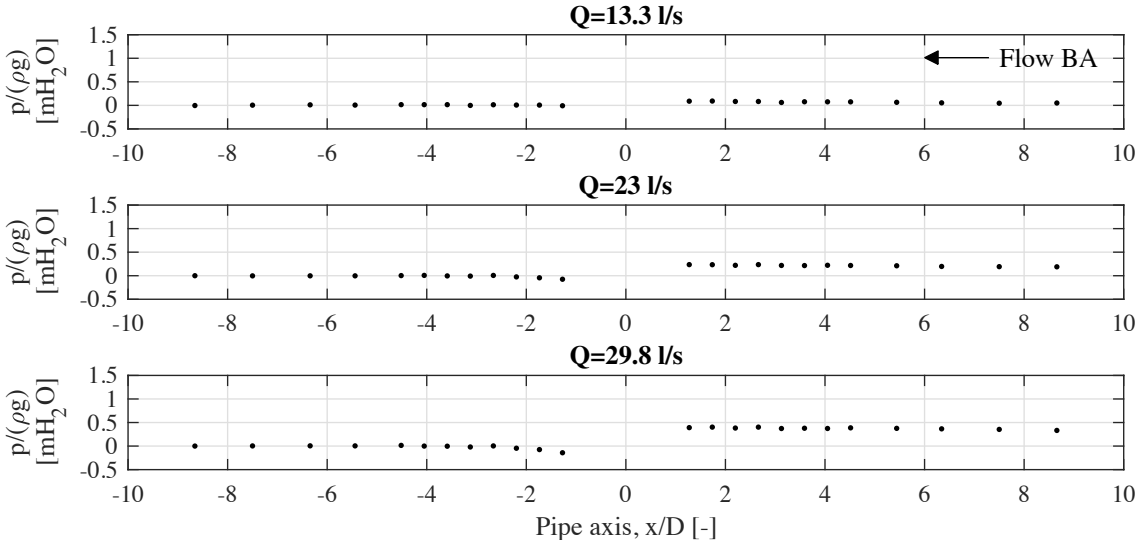
$L_{j,AB}$	3.79
$L_{j,BA}$	4.05

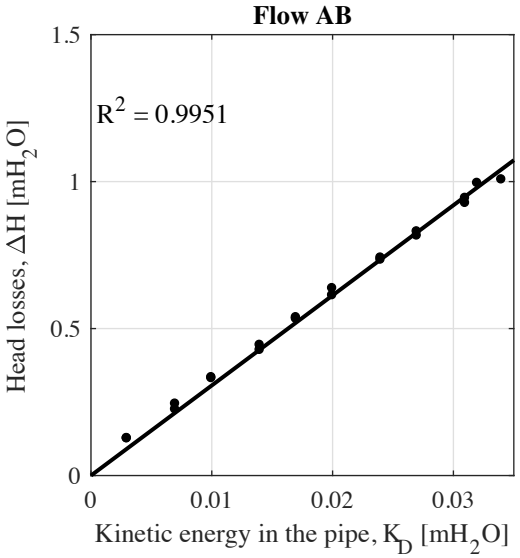


Geometrical parameters

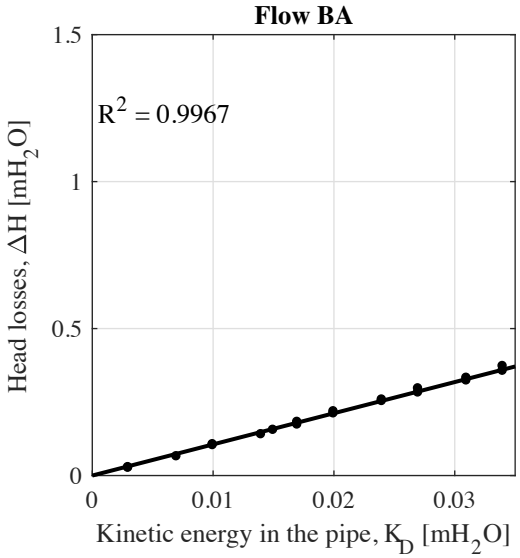
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	15	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.126
9.4	0.003	0.125
13.3	0.007	0.243
13.3	0.007	0.224
16.3	0.010	0.330
16.4	0.010	0.333
18.9	0.014	0.443
19.0	0.014	0.426
21.1	0.017	0.537
21.2	0.017	0.532
22.9	0.020	0.612
23.2	0.020	0.636
25.1	0.024	0.740
25.1	0.024	0.733
26.6	0.027	0.815
26.7	0.027	0.829
28.4	0.031	0.926
28.5	0.031	0.943
29.2	0.032	0.994
29.8	0.034	1.006



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.025
9.5	0.003	0.027
13.3	0.007	0.064
16.3	0.010	0.102
16.6	0.010	0.105
19.0	0.014	0.139
19.6	0.015	0.154
21.0	0.017	0.172
21.2	0.017	0.181
23.0	0.020	0.217
23.1	0.020	0.210
25.0	0.024	0.257
25.2	0.024	0.252
26.7	0.027	0.295
26.7	0.027	0.281
28.4	0.031	0.331
28.6	0.031	0.322
29.8	0.034	0.371
30.0	0.034	0.355

Orifice : **EXP_008**

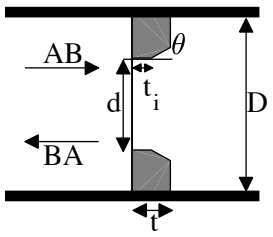
Type : chamfered orifice

Head loss coefficients

k_{AB}	30.6 ±0.45
k_{BA}	10.5 ±0.08
λ	0.35

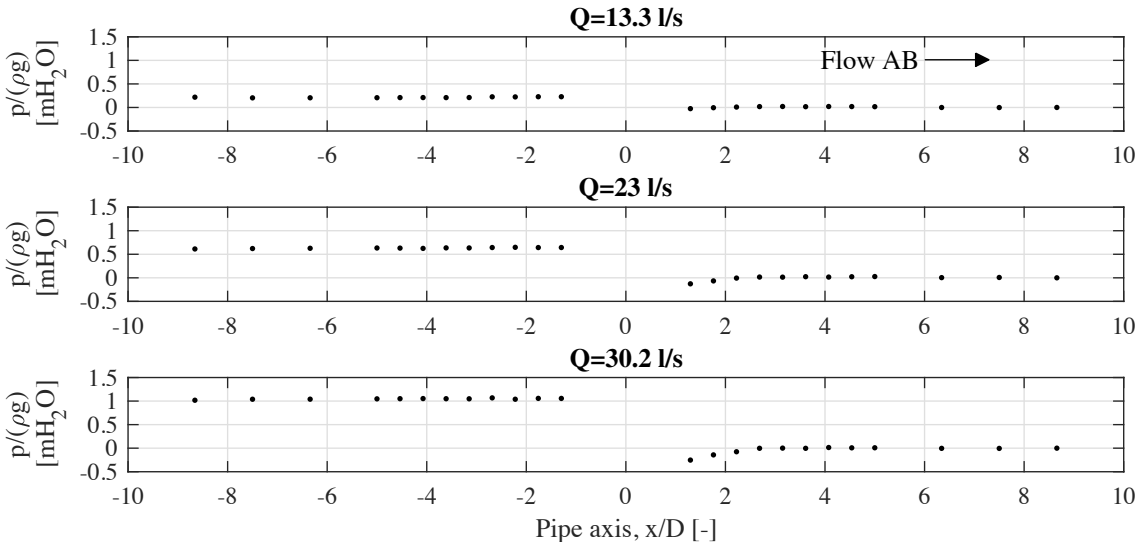
Jet length

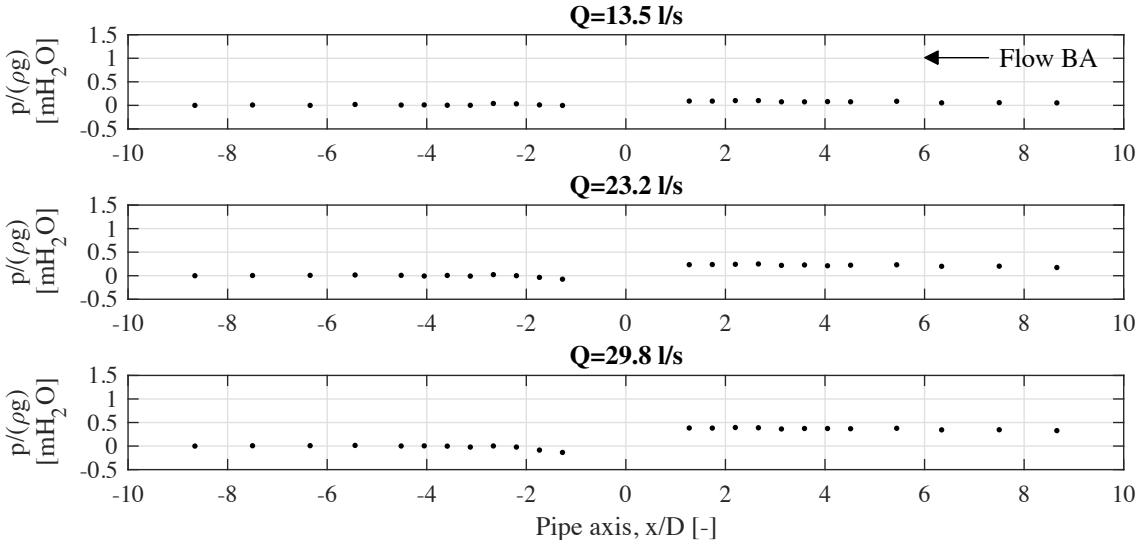
$L_{j,AB}$	3.81
$L_{j,BA}$	4.00

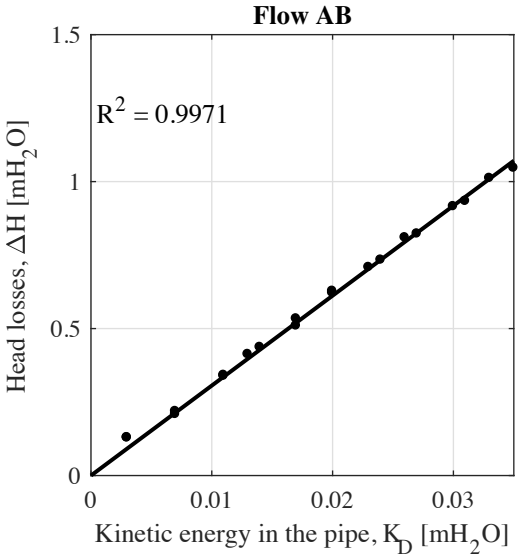


Geometrical parameters

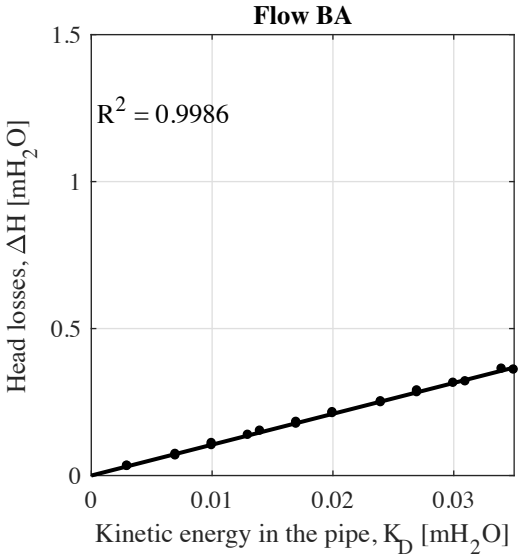
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	30	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.129
9.6	0.003	0.128
13.1	0.007	0.218
13.3	0.007	0.208
16.7	0.011	0.341
16.7	0.011	0.338
18.8	0.013	0.412
19.1	0.014	0.436
20.9	0.017	0.509
21.3	0.017	0.533
23.0	0.020	0.621
23.2	0.020	0.627
24.7	0.023	0.708
25.1	0.024	0.733
26.4	0.026	0.809
26.7	0.027	0.822
28.2	0.030	0.915
28.4	0.031	0.933
29.7	0.033	1.011
30.2	0.035	1.046



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.032
9.4	0.003	0.031
13.4	0.007	0.067
13.5	0.007	0.072
16.3	0.010	0.102
16.6	0.010	0.109
18.8	0.013	0.137
19.4	0.014	0.151
21.1	0.017	0.175
21.2	0.017	0.181
23.2	0.020	0.214
23.2	0.020	0.211
24.9	0.024	0.248
25.1	0.024	0.251
26.6	0.027	0.282
26.7	0.027	0.288
28.0	0.030	0.314
28.4	0.031	0.319
29.8	0.034	0.362
30.3	0.035	0.359

Orifice : **EXP_009**

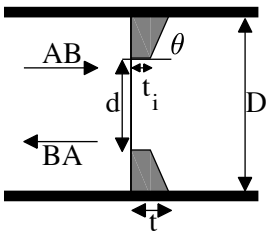
Type : chamfered orifice

Head loss coefficients

k_{AB}	31.0 ±0.55
k_{BA}	24.6 ±0.22
λ	0.79

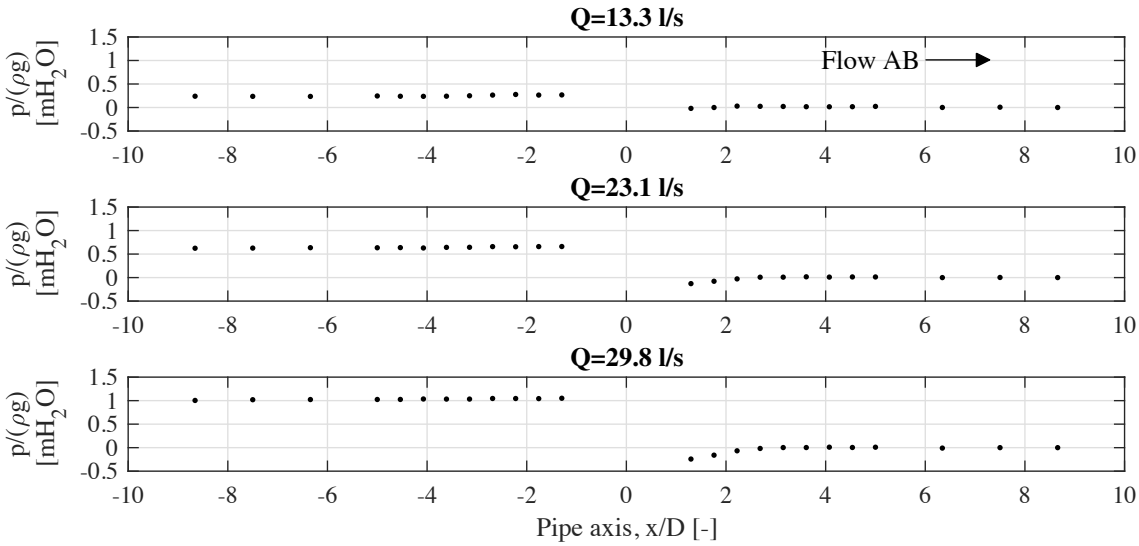
Jet length

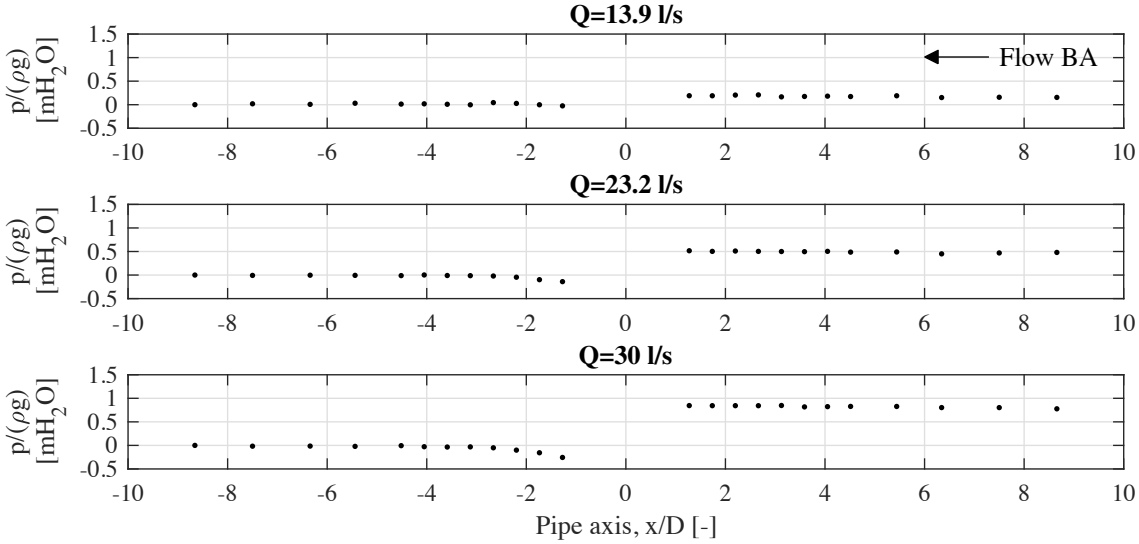
$L_{j,AB}$	3.35
$L_{j,BA}$	4.55

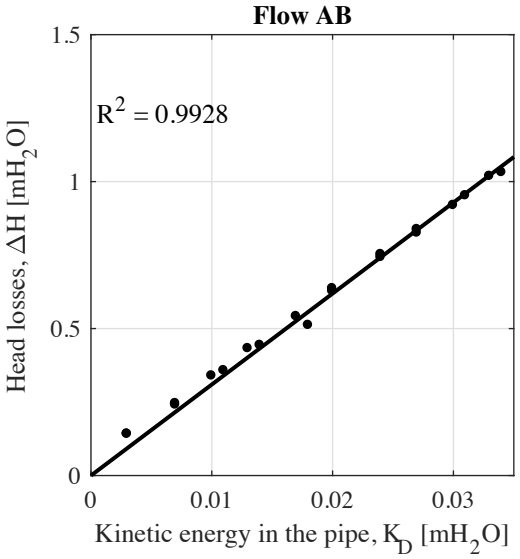


Geometrical parameters

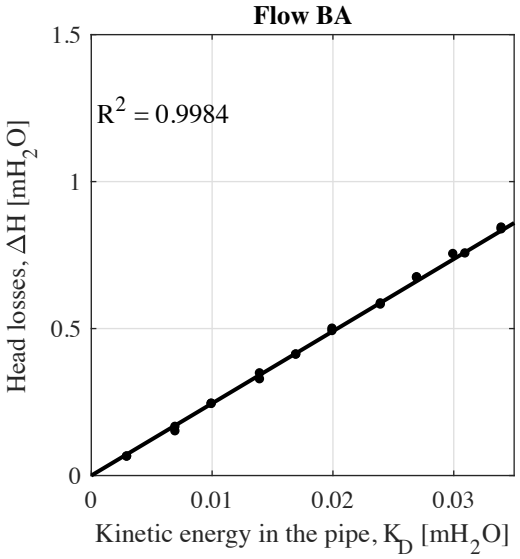
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	67	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.141
9.5	0.003	0.141
13.3	0.007	0.240
13.4	0.007	0.245
16.4	0.010	0.339
16.7	0.011	0.357
18.8	0.013	0.432
19.0	0.014	0.443
21.1	0.017	0.541
21.5	0.018	0.511
22.9	0.020	0.627
23.1	0.020	0.636
25.0	0.024	0.742
25.2	0.024	0.752
26.5	0.027	0.825
26.7	0.027	0.837
28.1	0.030	0.919
28.5	0.031	0.952
29.5	0.033	1.018
29.8	0.034	1.031



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.063
9.4	0.003	0.063
13.3	0.007	0.149
13.9	0.007	0.164
16.5	0.010	0.242
16.6	0.010	0.243
18.9	0.014	0.326
19.5	0.014	0.346
21.2	0.017	0.410
21.2	0.017	0.410
23.1	0.020	0.490
23.2	0.020	0.498
25.1	0.024	0.584
25.1	0.024	0.580
26.8	0.027	0.673
26.8	0.027	0.671
28.3	0.030	0.752
28.5	0.031	0.754
30.0	0.034	0.836
30.1	0.034	0.842

Orifice : **EXP_010**

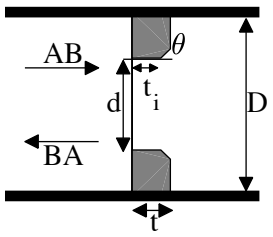
Type : chamfered orifice

Head loss coefficients

k_{AB}	30.1 ±0.55
k_{BA}	12.7 ±0.27
λ	0.79

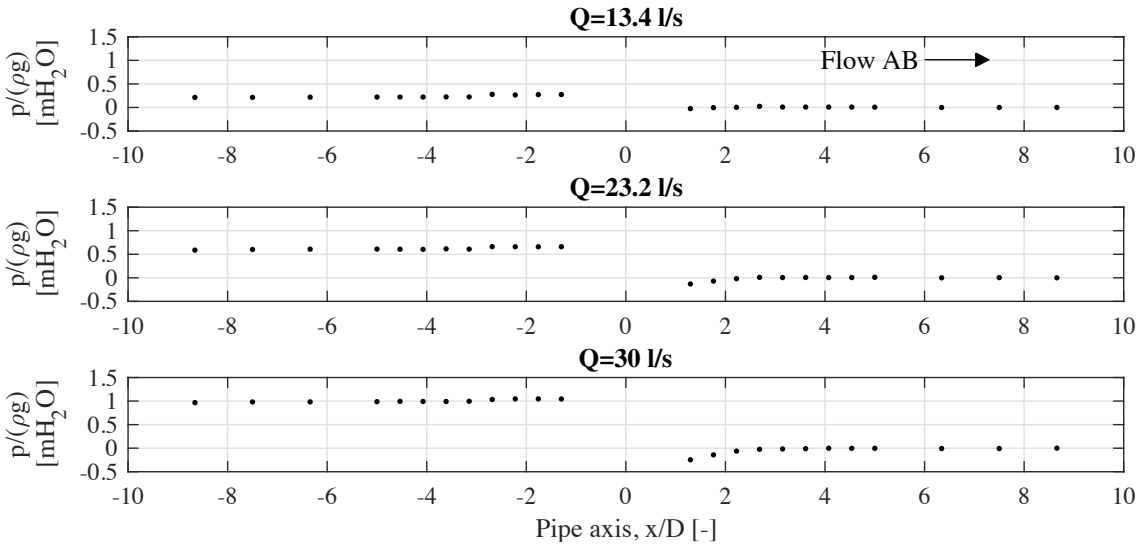
Jet length

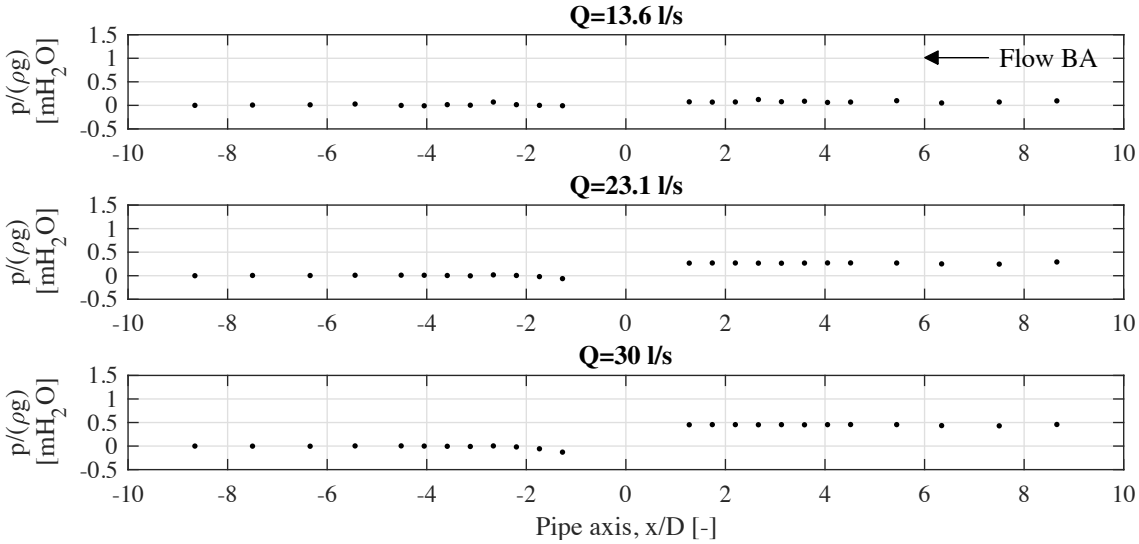
$L_{j,AB}$	3.68
$L_{j,BA}$	4.01

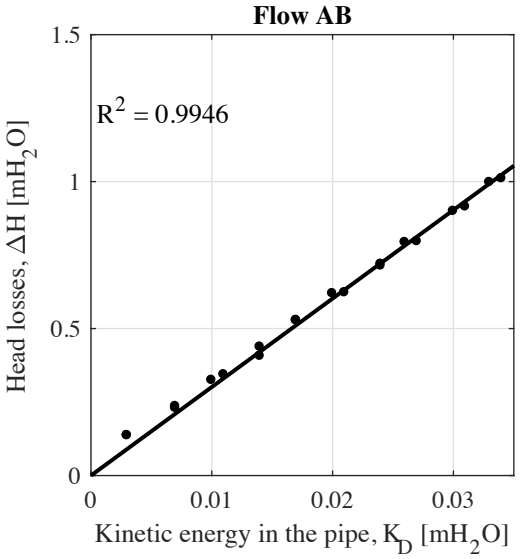


Geometrical parameters

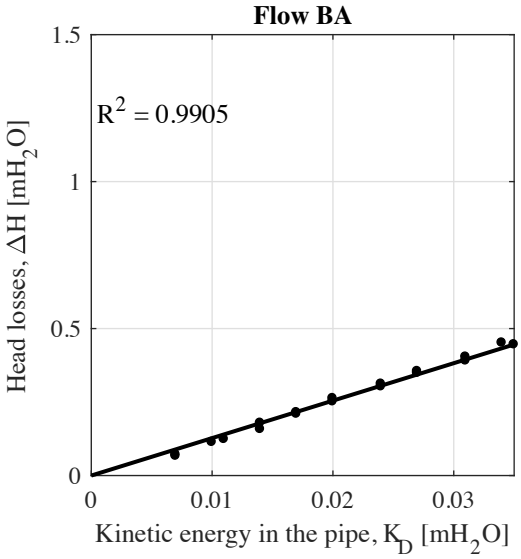
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	32.0	[mm]	α_i	*0.148*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.110
9.9	0.004	0.110
13.2	0.007	0.184
13.6	0.007	0.198
16.5	0.010	0.281
16.6	0.010	0.285
19.3	0.014	0.377
19.8	0.015	0.398
20.9	0.017	0.441
21.1	0.017	0.452
23.0	0.020	0.530
23.3	0.021	0.548
24.9	0.024	0.620
25.0	0.024	0.629
26.8	0.027	0.716
27.0	0.028	0.732
28.3	0.030	0.798
28.4	0.031	0.809
29.9	0.034	0.889
30.6	0.036	0.924



Q [l/s]	K_D [m]	ΔH [m]
13.5	0.007	0.066
13.6	0.007	0.071
16.4	0.010	0.113
16.7	0.011	0.123
18.9	0.014	0.157
19.4	0.014	0.178
21.2	0.017	0.214
21.3	0.017	0.209
23.1	0.020	0.262
23.2	0.020	0.251
25.1	0.024	0.311
25.2	0.024	0.302
26.8	0.027	0.354
26.9	0.027	0.348
28.4	0.031	0.403
28.6	0.031	0.390
30.0	0.034	0.451
30.4	0.035	0.445

Orifice : **EXP_0105**

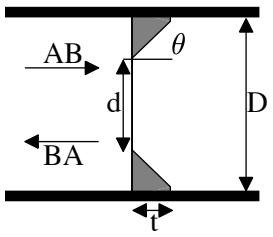
Type : chamfered orifice

Head loss coefficients

k_{AB}	32.95 ±0.72
k_{BA}	18.5 ±0.35
λ	0.79

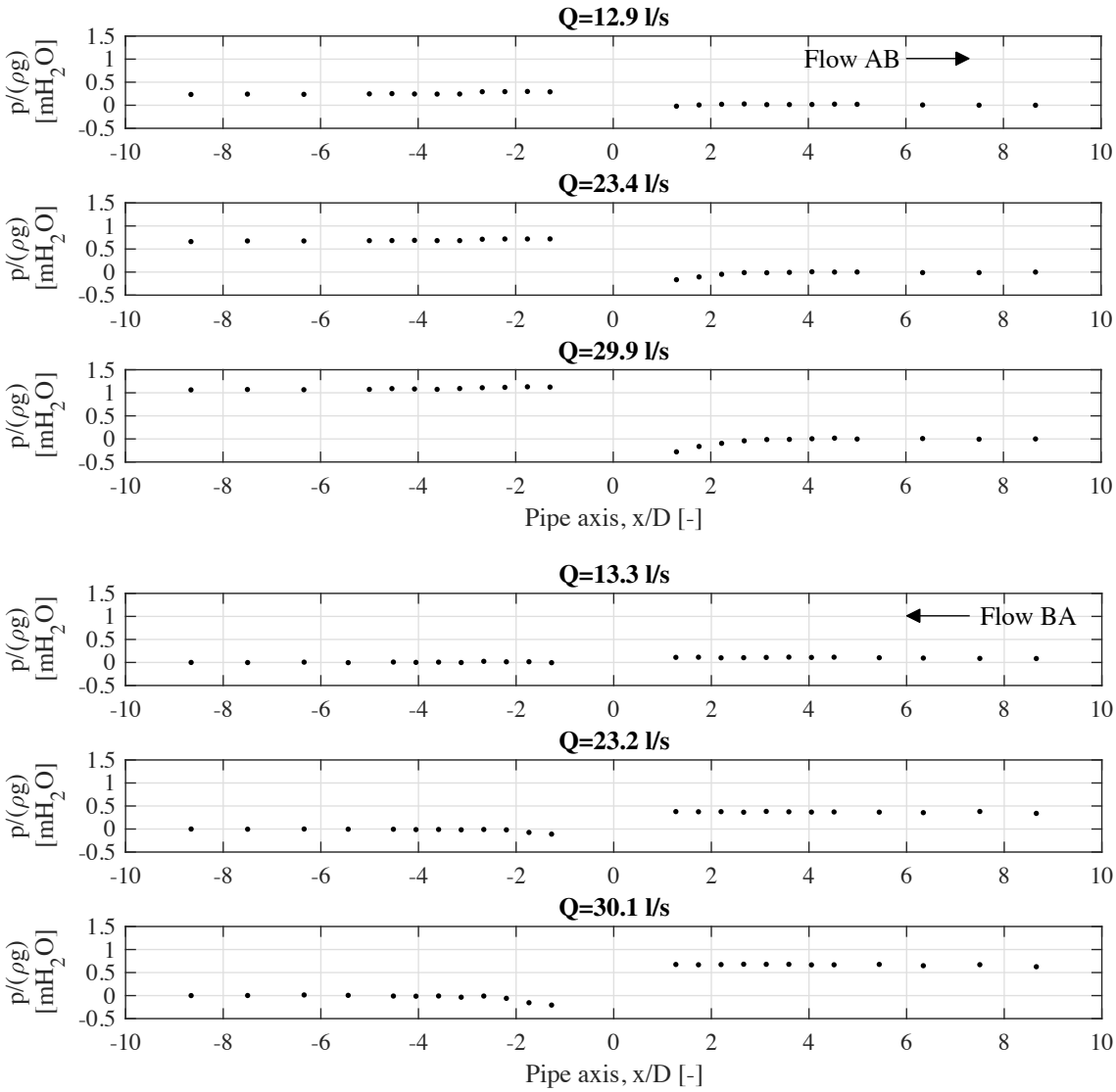
Jet length

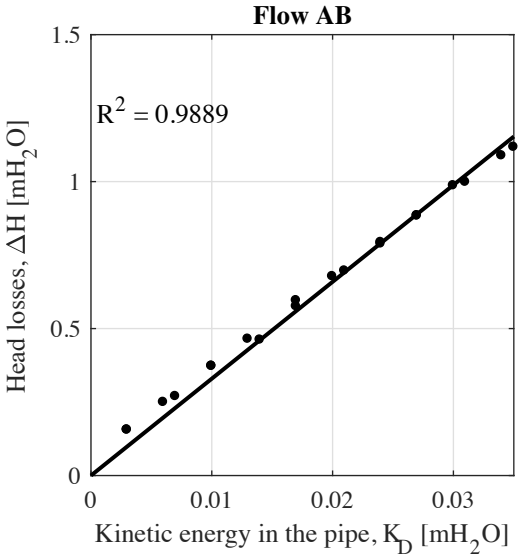
$L_{j,AB}$	3.96
$L_{j,BA}$	4.19



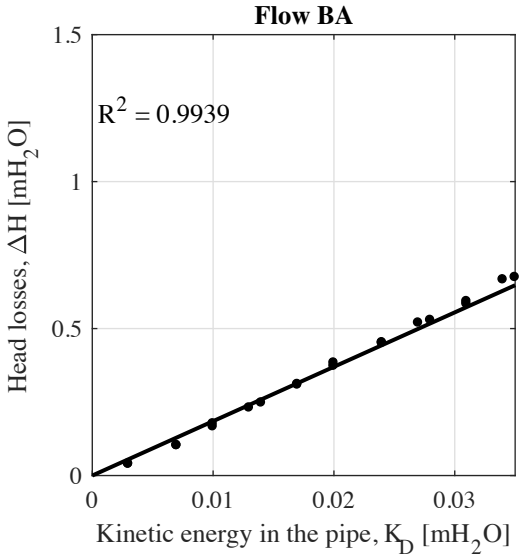
Geometrical parameters

d	107	[mm]	β	*0.545*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	0.0	[mm]	α_i	*0.0*	*[-]*
			θ	45	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.1	0.003	0.155
9.1	0.003	0.155
12.9	0.006	0.249
13.5	0.007	0.269
16.4	0.010	0.372
16.4	0.010	0.372
18.6	0.013	0.464
19.0	0.014	0.461
21.1	0.017	0.575
21.4	0.017	0.595
23.1	0.020	0.677
23.4	0.021	0.696
25.0	0.024	0.788
25.1	0.024	0.793
26.7	0.027	0.884
26.8	0.027	0.883
28.3	0.030	0.986
28.5	0.031	0.998
29.9	0.034	1.088
30.3	0.035	1.117



Q [l/s]	K_D [m]	ΔH [m]
9.2	0.003	0.039
9.2	0.003	0.039
13.3	0.007	0.102
13.3	0.007	0.102
16.1	0.010	0.166
16.5	0.010	0.176
18.6	0.013	0.230
19.1	0.014	0.247
21.1	0.017	0.308
21.4	0.017	0.310
23.2	0.020	0.372
23.2	0.020	0.383
25.1	0.024	0.452
25.1	0.024	0.450
26.9	0.027	0.519
27.0	0.028	0.528
28.4	0.031	0.583
28.5	0.031	0.592
30.1	0.034	0.666
30.3	0.035	0.674

Orifice : **EXP_011**

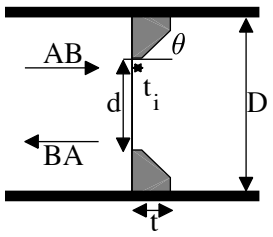
Type : chamfered orifice

Head loss coefficients

k_{AB}	31.45 ±0.44
k_{BA}	18.15 ±0.33
λ	0.58

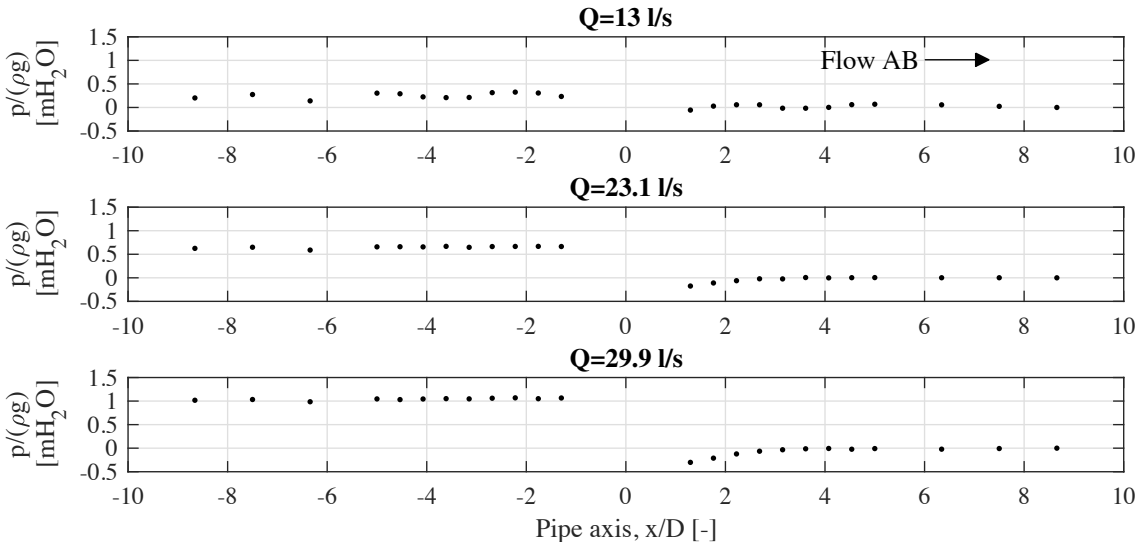
Jet length

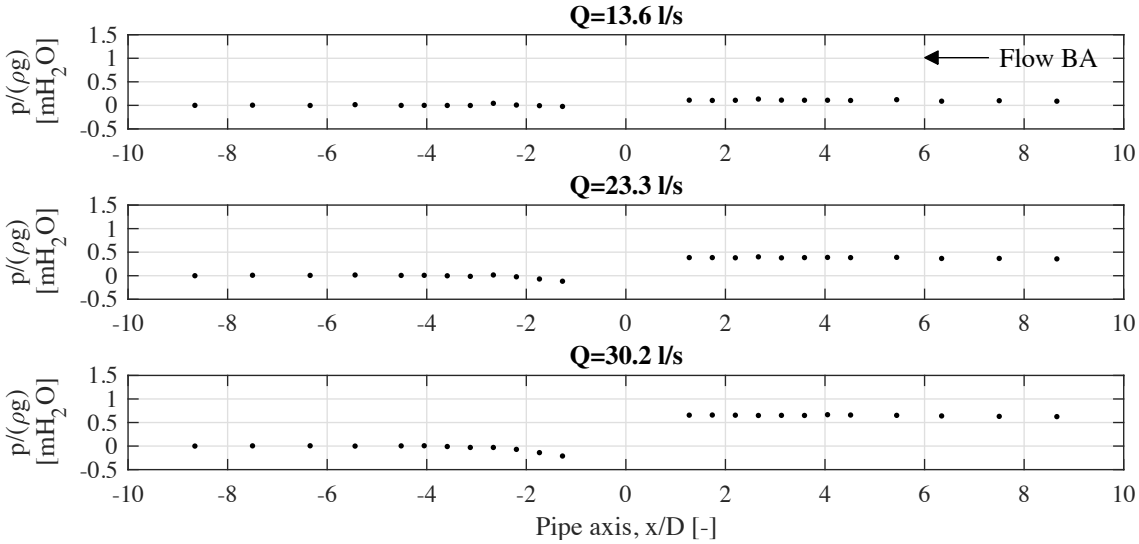
$L_{j,AB}$	3.96
$L_{j,BA}$	4.26

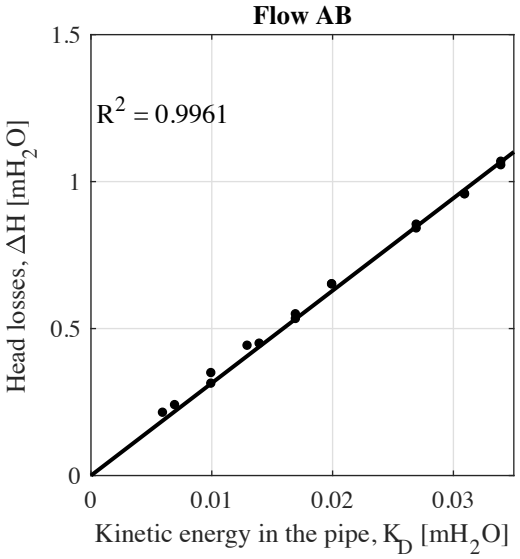


Geometrical parameters

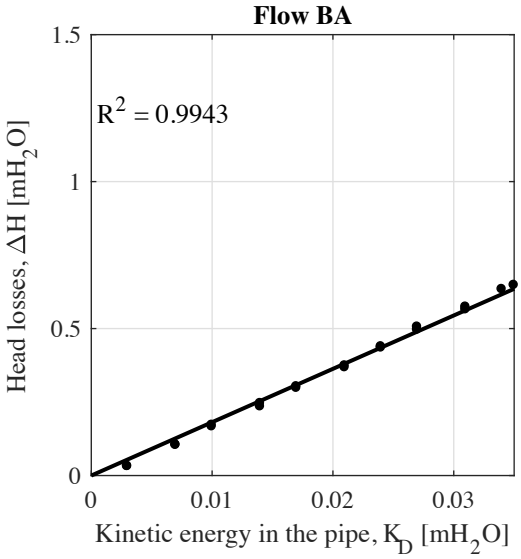
d	107	[mm]	β	*0.545*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	11.0	[mm]	α_i	*0.051*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.0	0.006	0.212
13.3	0.007	0.238
16.3	0.010	0.311
16.5	0.010	0.347
18.8	0.013	0.440
19.5	0.014	0.447
21.0	0.017	0.531
21.1	0.017	0.547
23.1	0.020	0.649
23.1	0.020	0.649
26.6	0.027	0.839
26.7	0.027	0.852
28.4	0.031	0.956
28.4	0.031	0.955
29.9	0.034	1.054
30.0	0.034	1.066



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.031
9.5	0.003	0.031
13.4	0.007	0.103
13.6	0.007	0.104
16.6	0.010	0.171
16.6	0.010	0.166
19.0	0.014	0.234
19.3	0.014	0.245
21.1	0.017	0.297
21.3	0.017	0.302
23.3	0.021	0.373
23.3	0.021	0.367
25.2	0.024	0.438
25.2	0.024	0.434
26.8	0.027	0.495
26.9	0.027	0.505
28.5	0.031	0.573
28.5	0.031	0.564
30.1	0.034	0.633
30.2	0.035	0.647

Orifice : **EXP_012**

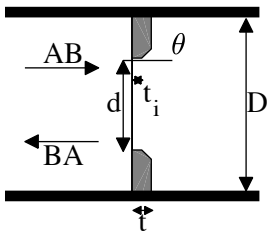
Type : chamfered orifice

Head loss coefficients

k_{AB}	31.45 ±0.27
k_{BA}	20.11 ±0.29
λ	0.58

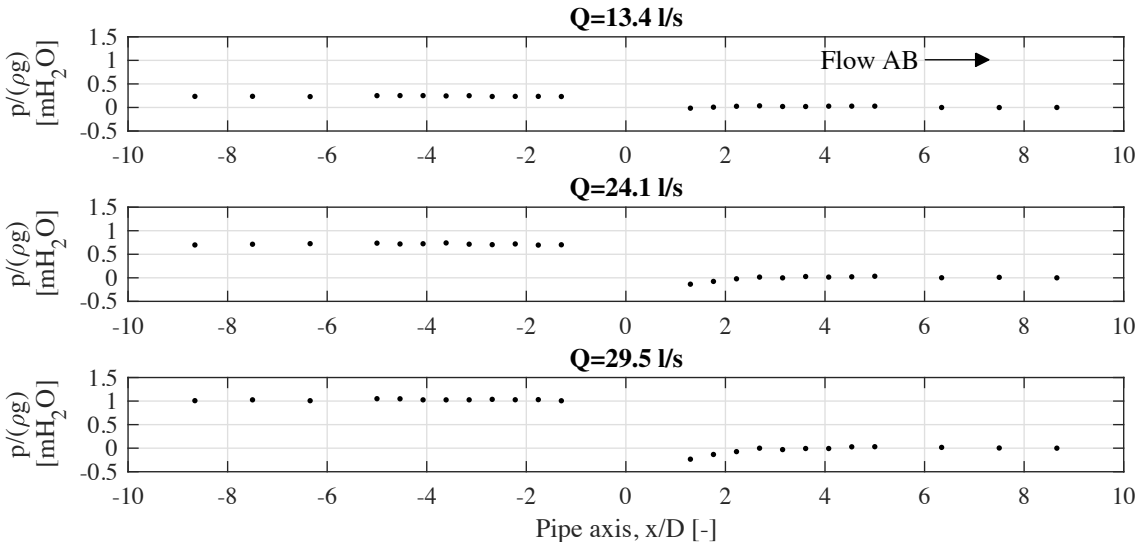
Jet length

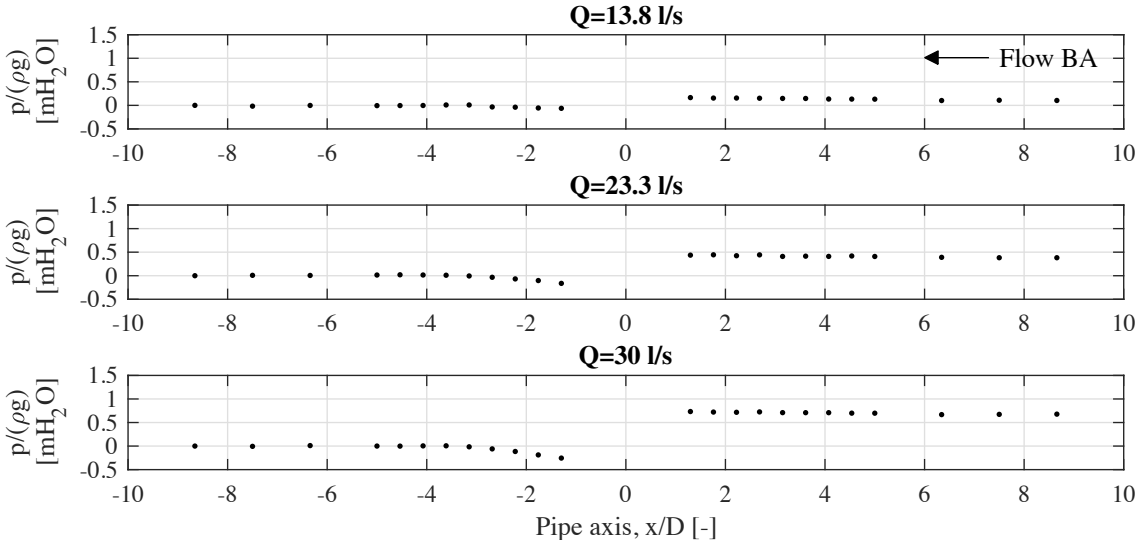
$L_{j,AB}$	3.98
$L_{j,BA}$	4.43

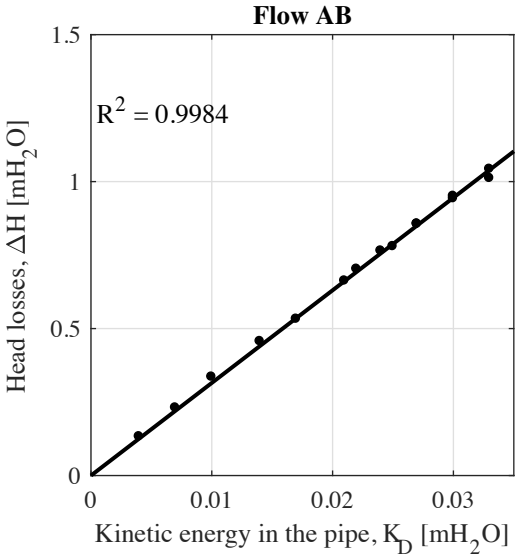


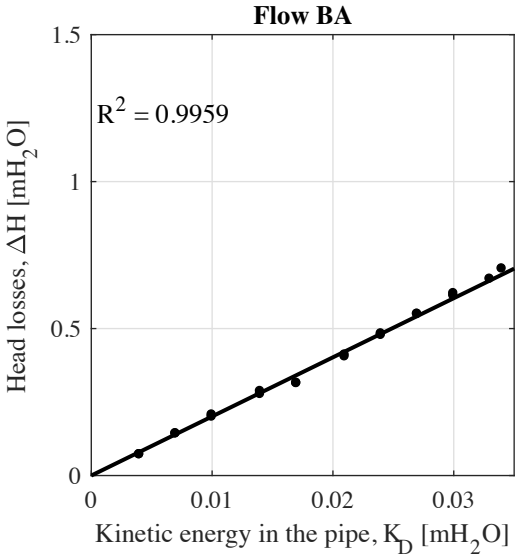
Geometrical parameters

d	107	[mm]	β	*0.545*	*[-]*
t	21.5	[mm]	α	*0.100*	*[-]*
t_i	11.0	[mm]	α_i	*0.051*	*[-]*
			θ	45	*[deg]*









Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.132
9.9	0.004	NaN
13.4	0.007	0.230
16.5	0.010	0.335
19.4	0.014	0.456
21.1	0.017	0.532
23.4	0.021	0.662
24.1	0.022	0.702
25.3	0.024	0.764
25.5	0.025	0.779
26.7	0.027	0.856
26.9	0.027	0.855
28.2	0.030	0.942
28.3	0.030	0.950
29.5	0.033	1.011
29.7	0.033	1.042

Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.071
9.7	0.004	0.071
13.8	0.007	0.142
13.8	0.007	0.142
16.3	0.010	0.199
16.5	0.010	0.206
19.0	0.014	0.276
19.3	0.014	0.286
21.1	0.017	0.313
21.3	0.017	0.314
23.3	0.021	0.404
23.4	0.021	0.410
25.1	0.024	0.477
25.4	0.024	0.482
26.8	0.027	0.549
26.9	0.027	0.548
28.2	0.030	0.611
28.3	0.030	0.619
29.3	0.033	0.668
30.0	0.034	0.703

Orifice : **EXP_013**

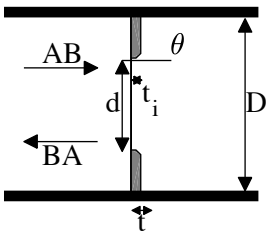
Type : chamfered orifice

Head loss coefficients

k_{AB}	29.0 ±0.25
k_{BA}	20.5 ±0.20
λ	0.58

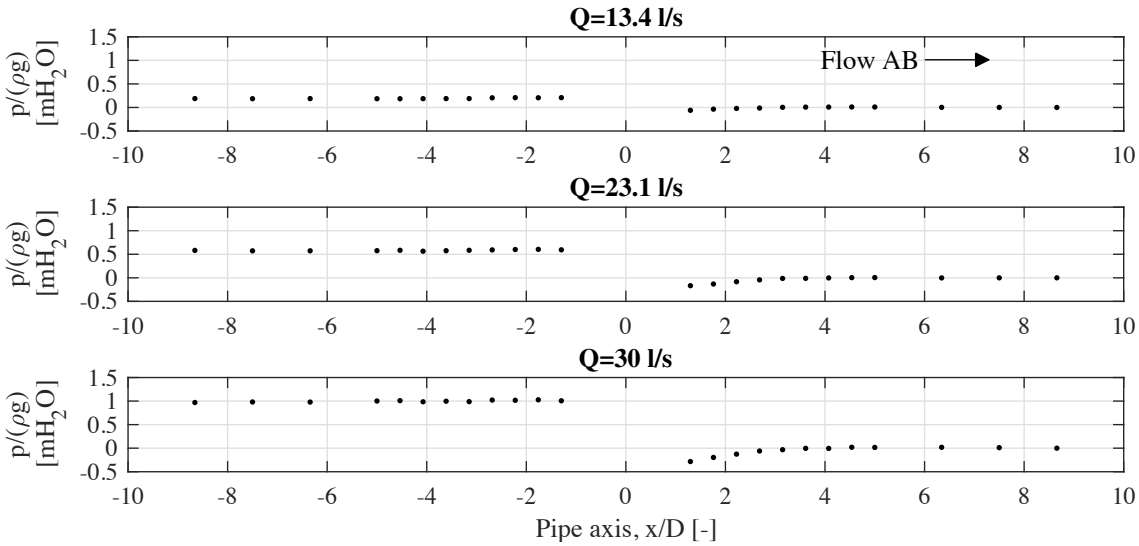
Jet length

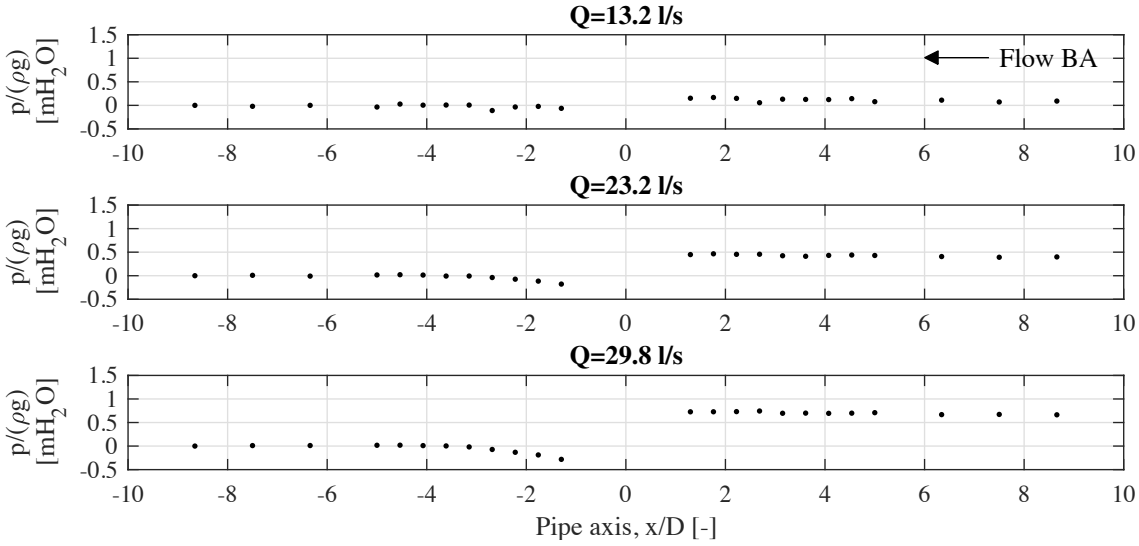
$L_{j,AB}$	4.01
$L_{j,BA}$	4.03

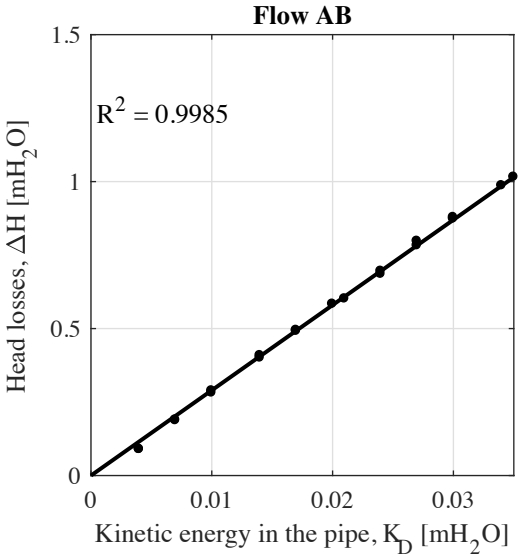


Geometrical parameters

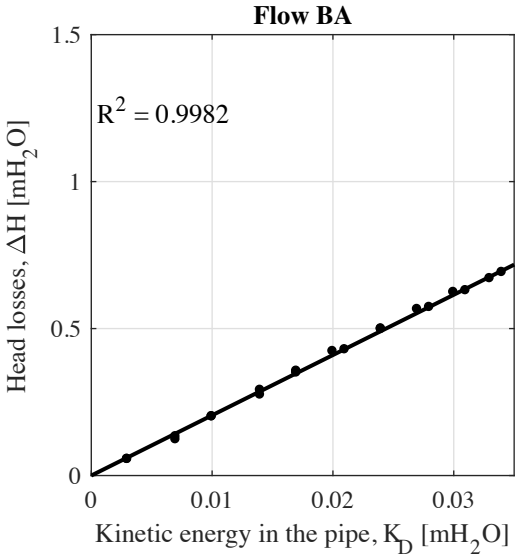
d	107	[mm]	β	*0.545*	*[-]*
t	11.0	[mm]	α	*0.051*	*[-]*
t_i	5.4	[mm]	α_i	*0.025*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.089
9.7	0.004	0.089
13.3	0.007	0.187
13.4	0.007	0.189
16.3	0.010	0.288
16.5	0.010	0.281
19.1	0.014	0.400
19.4	0.014	0.408
21.2	0.017	0.491
21.2	0.017	0.494
23.1	0.020	0.583
23.4	0.021	0.601
25.0	0.024	0.685
25.2	0.024	0.695
26.7	0.027	0.782
26.9	0.027	0.797
28.3	0.030	0.873
28.3	0.030	0.878
30.0	0.034	0.986
30.3	0.035	1.015



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.055
9.5	0.003	0.055
13.2	0.007	0.122
13.7	0.007	0.132
16.4	0.010	0.200
16.4	0.010	0.200
18.9	0.014	0.274
19.4	0.014	0.290
21.2	0.017	0.349
21.4	0.017	0.355
23.2	0.020	0.422
23.3	0.021	0.428
25.3	0.024	0.499
25.3	0.024	0.497
26.8	0.027	0.565
27.1	0.028	0.572
28.2	0.030	0.623
28.4	0.031	0.629
29.4	0.033	0.670
29.8	0.034	0.691

Orifice : **EXP_014**

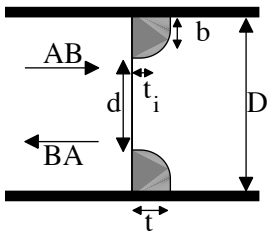
Type : rounded orifice

Head loss coefficients

k_{AB}	31.85 ±0.57
k_{BA}	9.0 ±0.23
λ	0.28

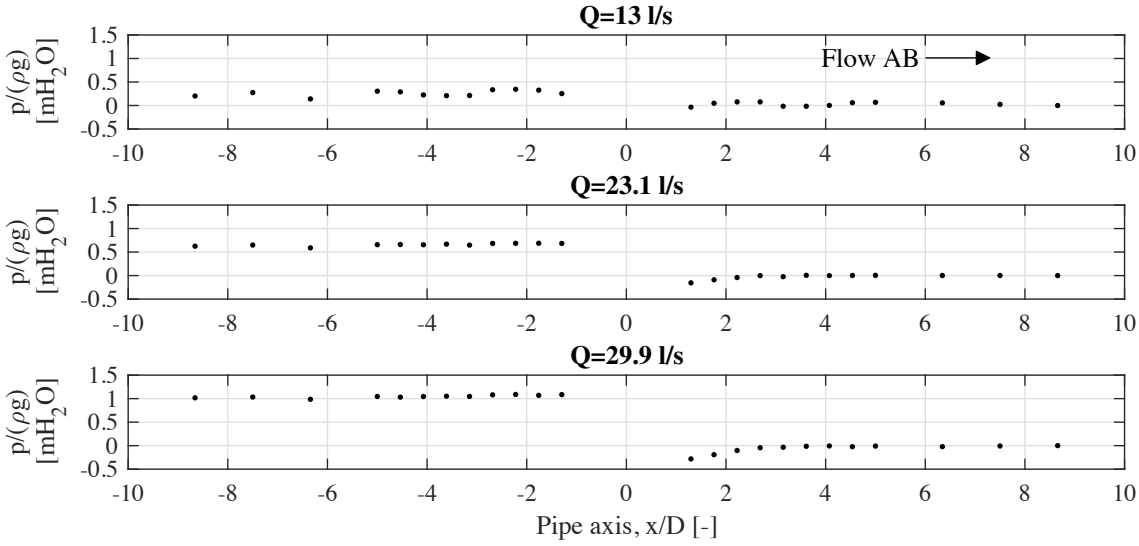
Jet length

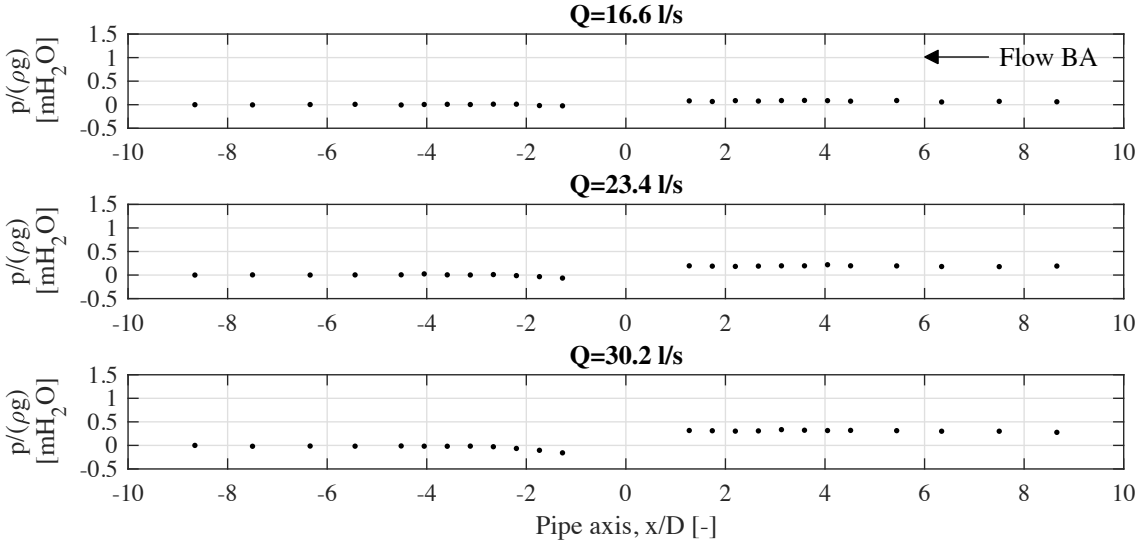
$L_{j,AB}$	3.56
$L_{j,BA}$	4.03

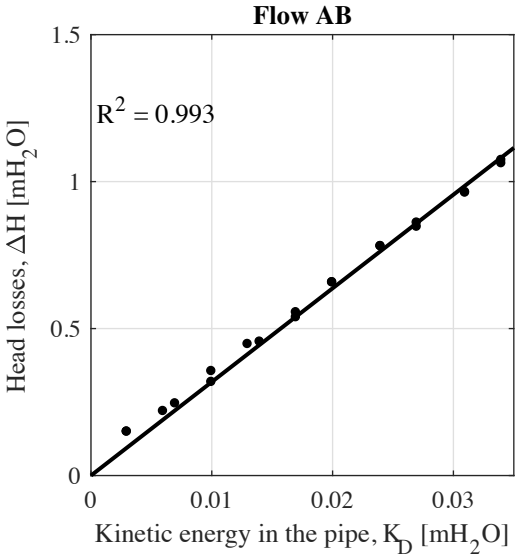


Geometrical parameters

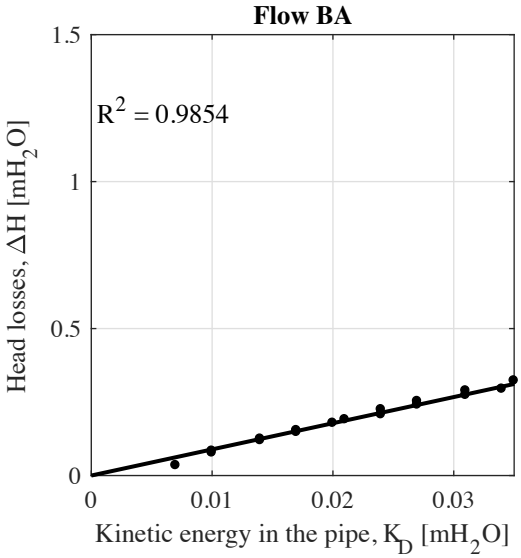
d	107	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	8.3	[mm]	α_i	*0.038*	*[-]*
b	24	[mm]	β_b	0.111	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.089
9.7	0.004	0.089
13.3	0.007	0.187
13.4	0.007	0.189
16.3	0.010	0.288
16.5	0.010	0.281
19.1	0.014	0.400
19.4	0.014	0.408
21.2	0.017	0.491
21.2	0.017	0.494
23.1	0.020	0.583
23.4	0.021	0.601
25.0	0.024	0.685
25.2	0.024	0.695
26.7	0.027	0.782
26.9	0.027	0.797
28.3	0.030	0.873
28.3	0.030	0.878
30.0	0.034	0.986
30.3	0.035	1.015



Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.034
16.2	0.010	0.077
16.6	0.010	0.083
19.2	0.014	0.124
19.2	0.014	0.119
21.1	0.017	0.147
21.3	0.017	0.153
23.2	0.020	0.178
23.4	0.021	0.190
25.0	0.024	0.207
25.3	0.024	0.224
26.8	0.027	0.252
26.9	0.027	0.240
28.6	0.031	0.288
28.7	0.031	0.273
30.0	0.034	0.294
30.2	0.035	0.322

Orifice : **EXP_015**

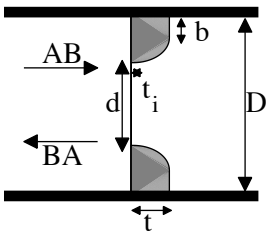
Type : rounded orifice

Head loss coefficients

k_{AB}	46.7 ±0.57
k_{BA}	21.3 ±0.48
λ	0.46

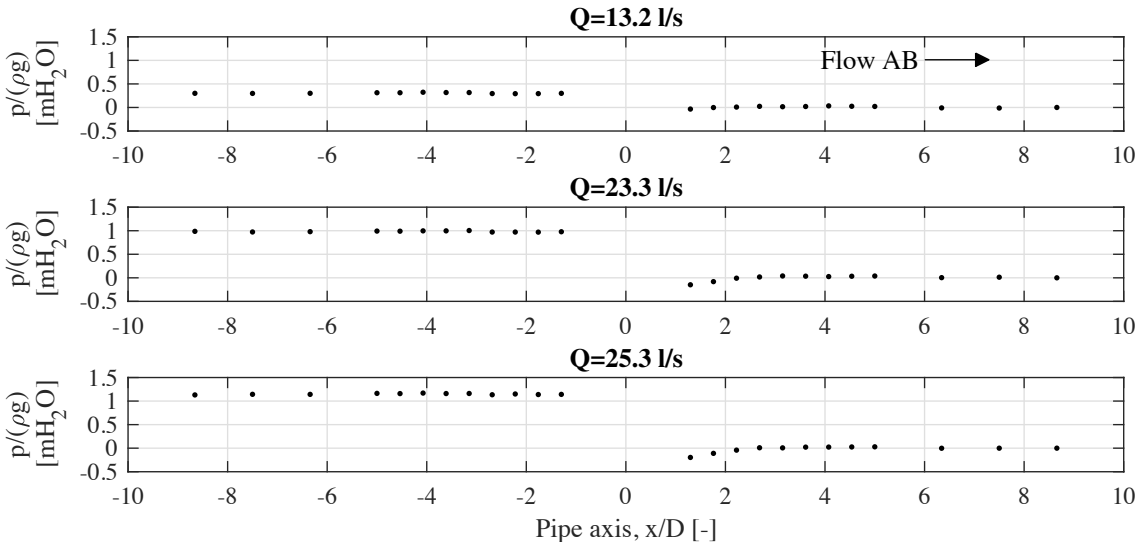
Jet length

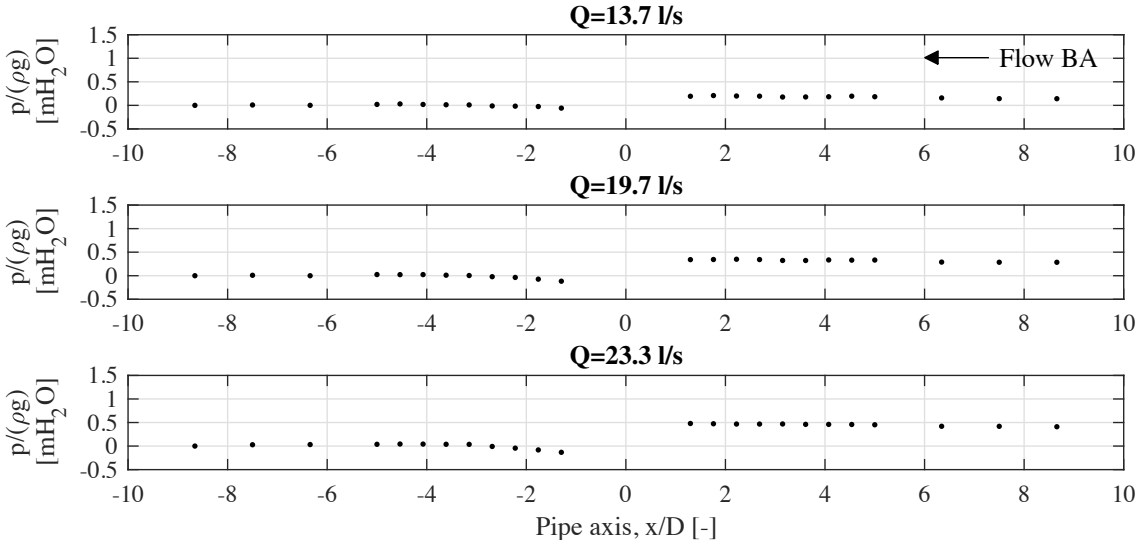
$L_{j,AB}$	3.85
$L_{j,BA}$	4.11

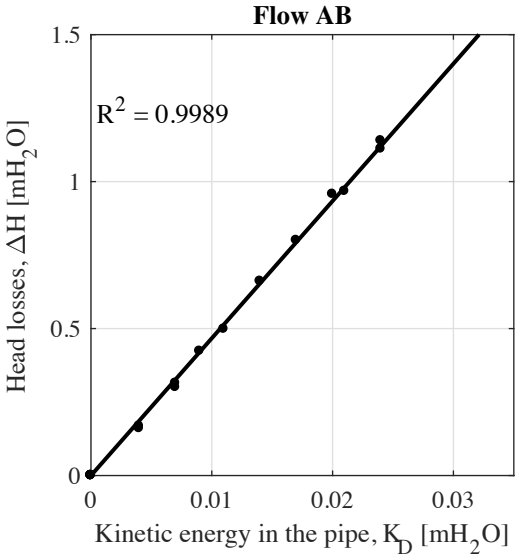


Geometrical parameters

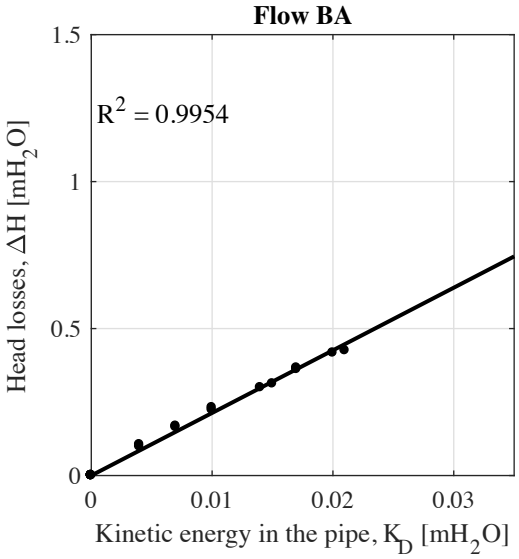
d	96.3	[mm]	β	*0.446*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	3.2	[mm]	α_i	*0.015*	*[-]*
b	29.4	[mm]	β_b	0.136	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.160
9.9	0.004	0.168
13.2	0.007	0.300
13.5	0.007	0.314
15.4	0.009	0.423
16.8	0.011	0.498
19.3	0.014	0.661
21.2	0.017	0.800
23.1	0.020	0.957
23.3	0.021	0.967
25.0	0.024	1.111
25.3	0.024	1.139



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.098
9.7	0.004	0.105
13.5	0.007	0.164
13.7	0.007	0.168
16.3	0.010	0.223
16.6	0.010	0.231
19.2	0.014	0.299
19.7	0.015	0.312
21.2	0.017	0.361
21.3	0.017	0.366
23.1	0.020	0.417
23.3	0.021	0.425

Orifice : **EXP_016**

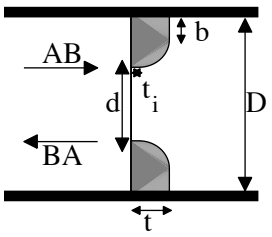
Type : Sharp orifices

Head loss coefficients

k_{AB}	92.4 ±0.57
k_{BA}	29.6 ±0.17
λ	0.32

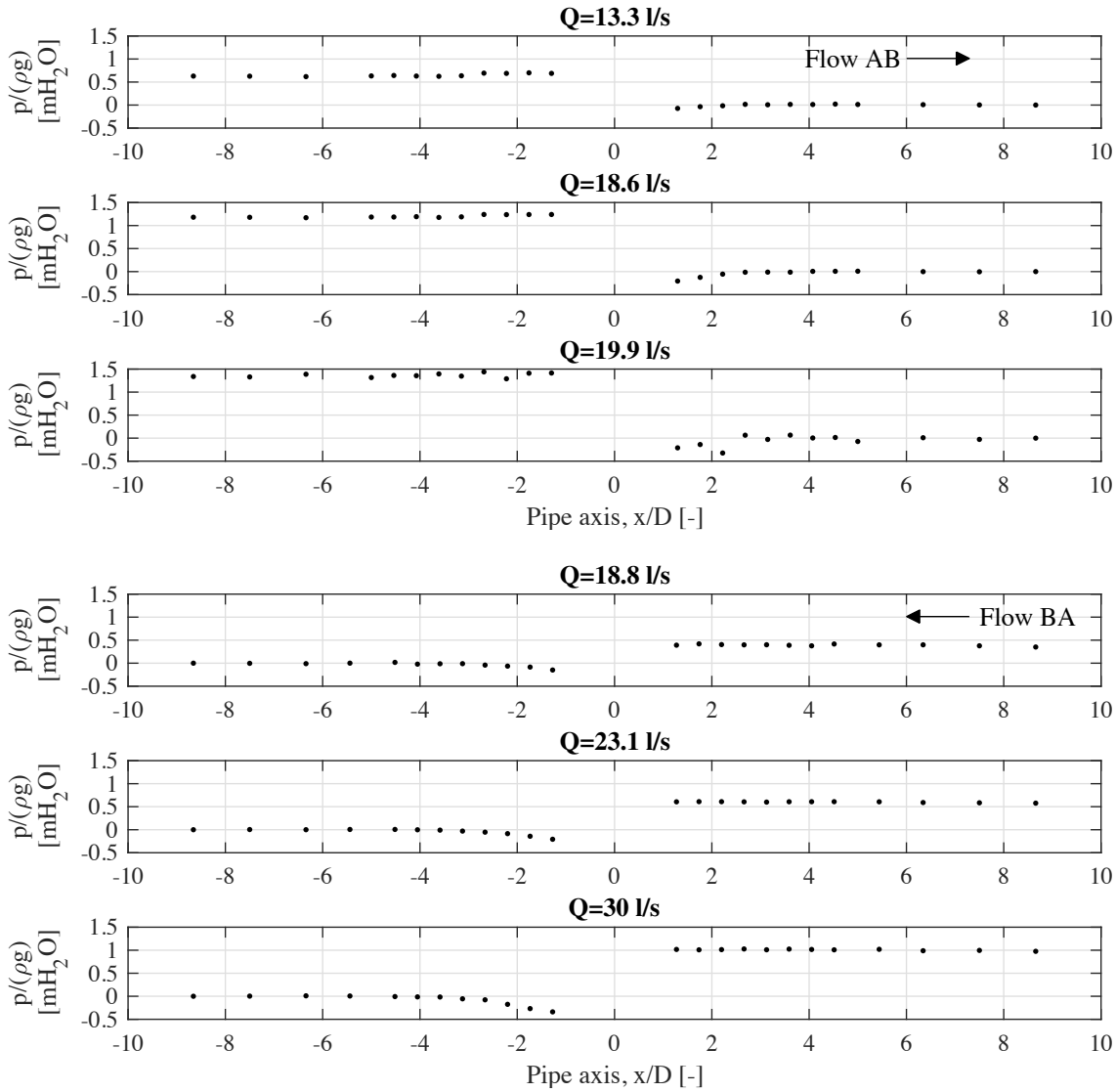
Jet length

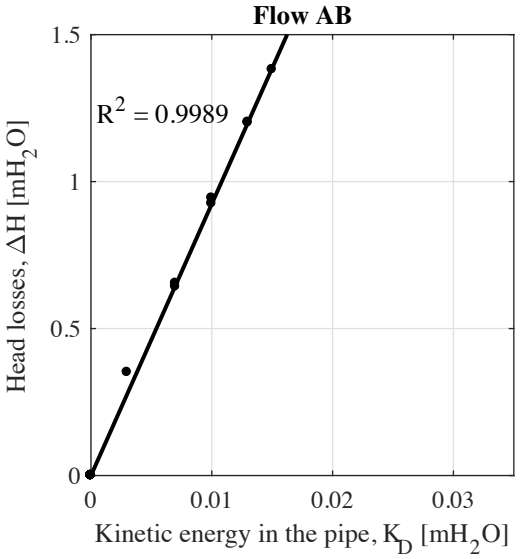
$L_{j,AB}$	3.50
$L_{j,BA}$	3.87

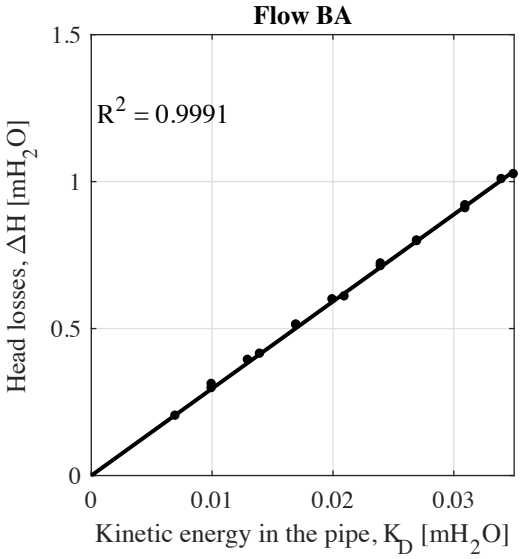


Geometrical parameters

d	85.6	[mm]	β	*0.396*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	8.1	[mm]	α_i	*0.038*	*[-]*
b	31.9	[mm]	β_b	0.148	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.351
9.4	0.003	0.350
13.3	0.007	0.642
13.4	0.007	0.654
16.2	0.010	0.925
16.4	0.010	0.944
18.6	0.013	1.200
18.6	0.013	1.202
19.9	0.015	1.381
21.2	0.017	1.550

Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.202
16.1	0.010	0.296
16.4	0.010	0.310
18.8	0.013	0.392
19.1	0.014	0.413
21.2	0.017	0.512
21.3	0.017	0.511
23.1	0.020	0.598
23.3	0.021	0.608
25.3	0.024	0.711
25.4	0.024	0.720
26.7	0.027	0.798
26.8	0.027	0.796
28.5	0.031	0.908
28.6	0.031	0.918
30.0	0.034	1.007
30.2	0.035	1.024

Orifice : **EXP_017**

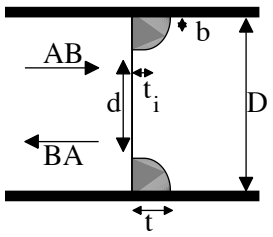
Type : rounded orifice

Head loss coefficients

k_{AB}	13.8 ±0.74
k_{BA}	3.5 ±0.08
λ	0.25

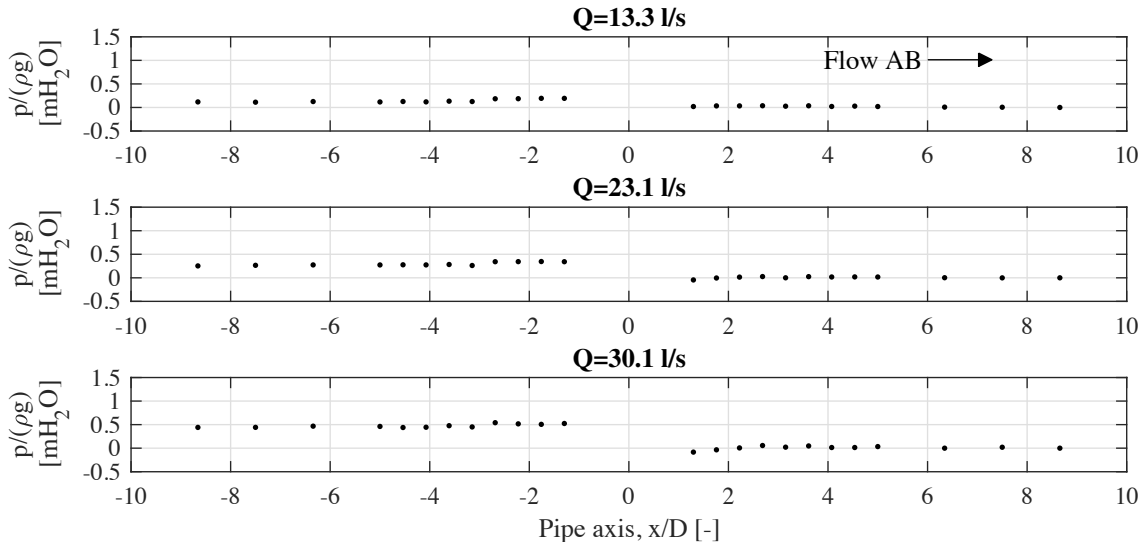
Jet length

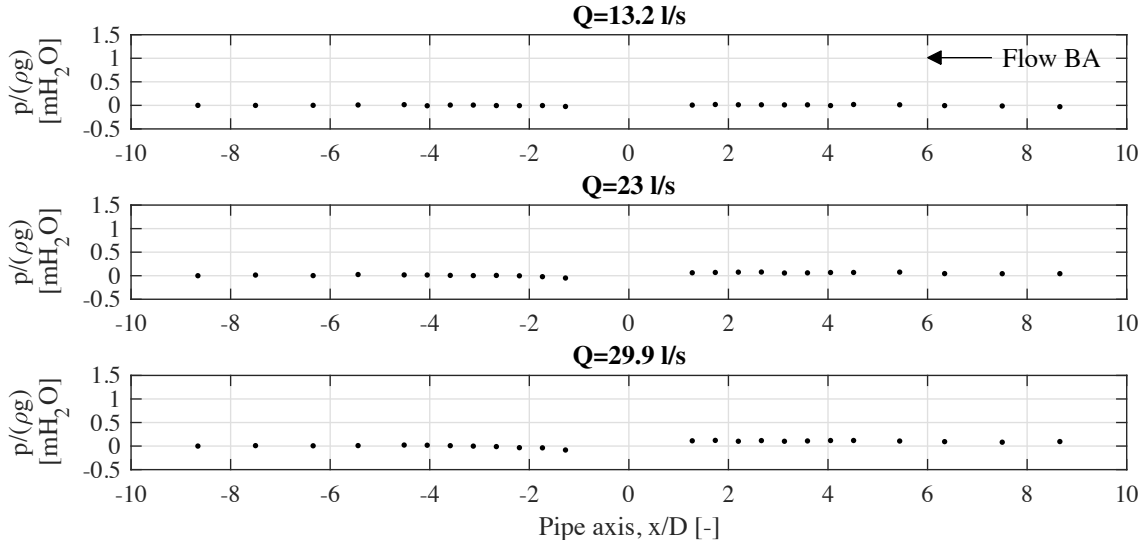
$L_{j,AB}$	4.32
$L_{j,BA}$	4.13

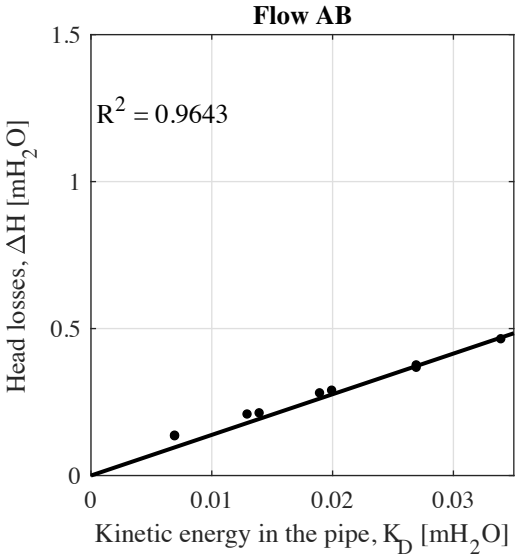


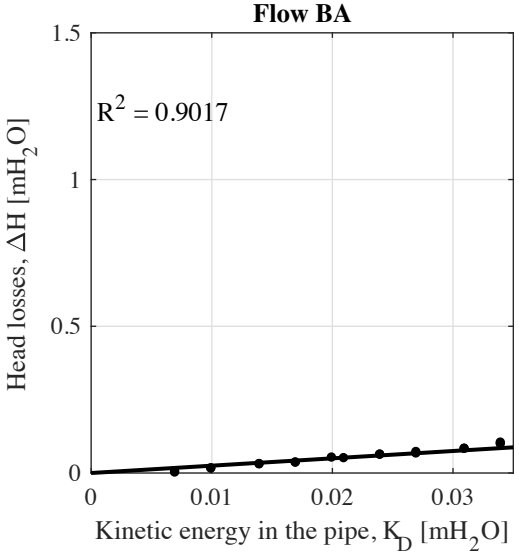
Geometrical parameters

d	128.4	[mm]	β	*0.594*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	13.8	[mm]	α_i	*0.064*	*[-]*
b	7.0	[mm]	β_b	0.032	*[-]*









Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.132
13.8	0.007	0.134
18.6	0.013	0.206
19.1	0.014	0.210
22.6	0.019	0.278
23.1	0.020	0.287
26.6	0.027	0.365
26.9	0.027	0.373
30.1	0.034	0.462
30.6	0.036	0.469

Q [l/s]	K_D [m]	ΔH [m]
7.1	0.002	0.004
7.1	0.002	0.004
13.2	0.007	0.020
13.4	0.007	0.023
16.2	0.010	0.034
16.2	0.010	0.034
19.0	0.014	0.048
19.2	0.014	0.049
21.0	0.017	0.054
21.0	0.017	0.054
23.0	0.020	0.071
23.3	0.021	0.069
25.1	0.024	0.081
25.1	0.024	0.081
26.8	0.027	0.085
26.8	0.027	0.090
28.5	0.031	0.101
28.5	0.031	0.101
29.9	0.034	0.117
30.1	0.034	0.122

Orifice : **EXP_018**

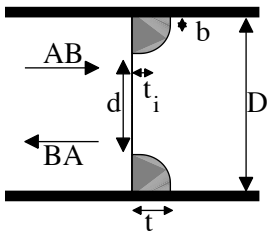
Type : Sharp orifices

Head loss coefficients

k_{AB}	17.3 ±0.20
k_{BA}	7.5 ±0.40
λ	0.43

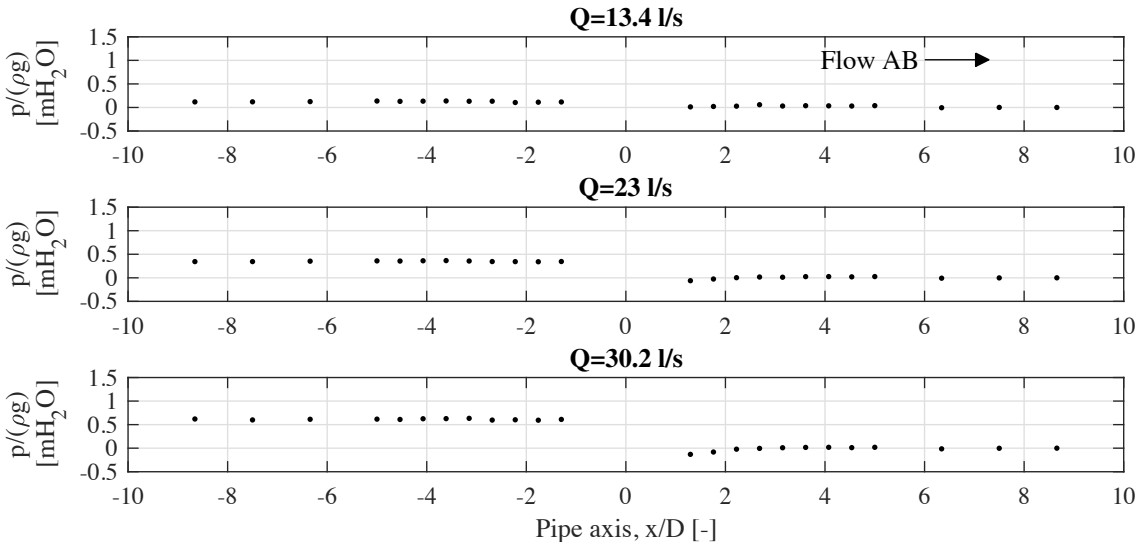
Jet length

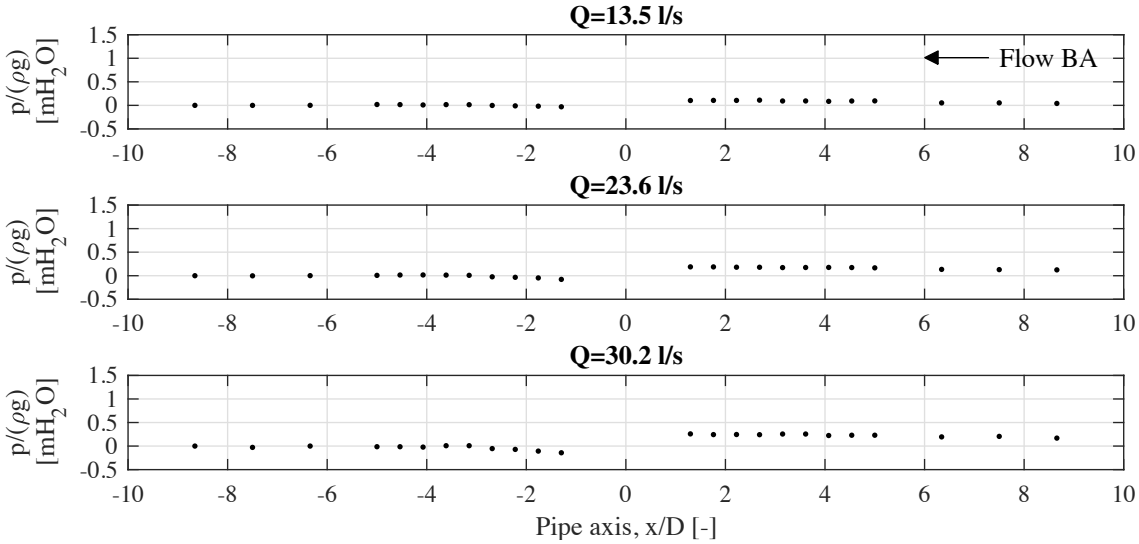
$L_{j,AB}$	4.23
$L_{j,BA}$	3.93

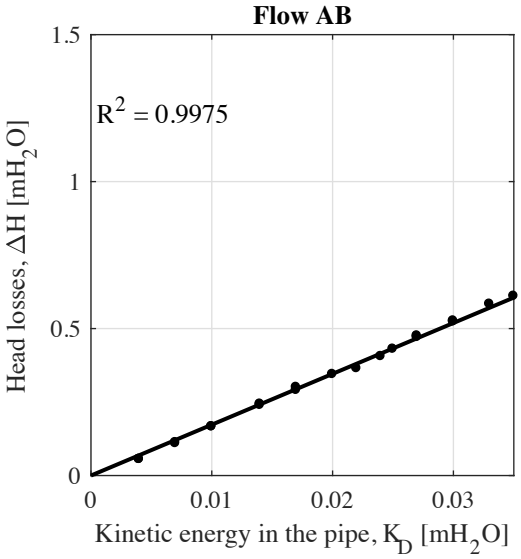


Geometrical parameters

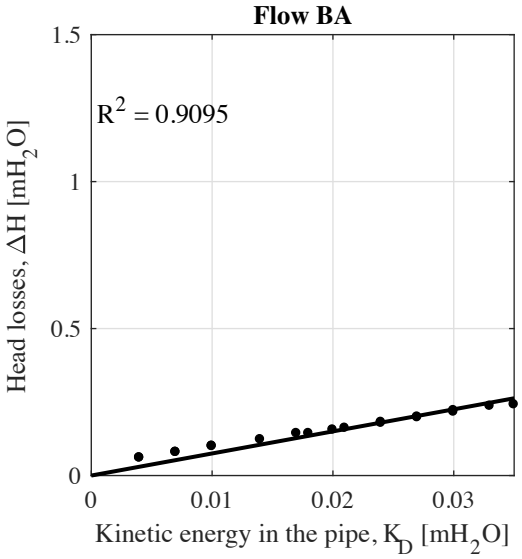
d	117.7	[mm]	β	*0.545*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	8.2	[mm]	α_i	*0.038*	*[-]*
b	15.8	[mm]	β_b	0.073	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
10.1	0.004	0.055
10.1	0.004	0.055
13.4	0.007	0.112
13.4	0.007	0.109
16.2	0.010	0.166
16.2	0.010	0.166
19.2	0.014	0.239
19.4	0.014	0.243
21.1	0.017	0.290
21.3	0.017	0.300
23.0	0.020	0.344
23.8	0.022	0.364
25.0	0.024	0.405
25.6	0.025	0.430
26.7	0.027	0.470
26.9	0.027	0.475
28.1	0.030	0.523
28.2	0.030	0.526
29.6	0.033	0.583
30.2	0.035	0.610



Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.060
9.8	0.004	0.060
13.5	0.007	0.079
13.5	0.007	0.079
16.2	0.010	0.099
16.5	0.010	0.100
19.2	0.014	0.122
21.3	0.017	0.143
21.6	0.018	0.143
23.0	0.020	0.155
23.6	0.021	0.161
25.0	0.024	0.178
25.4	0.024	0.181
26.8	0.027	0.197
26.9	0.027	0.199
28.1	0.030	0.216
28.3	0.030	0.221
29.6	0.033	0.236
30.2	0.035	0.241

Orifice : **EXP_019**

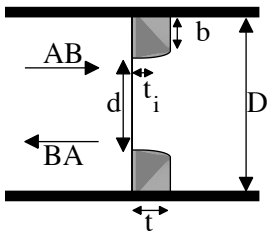
Type : rounded orifice

Head loss coefficients

k_{AB}	32.4 ±0.47
k_{BA}	8.55 ±0.37
λ	0.26

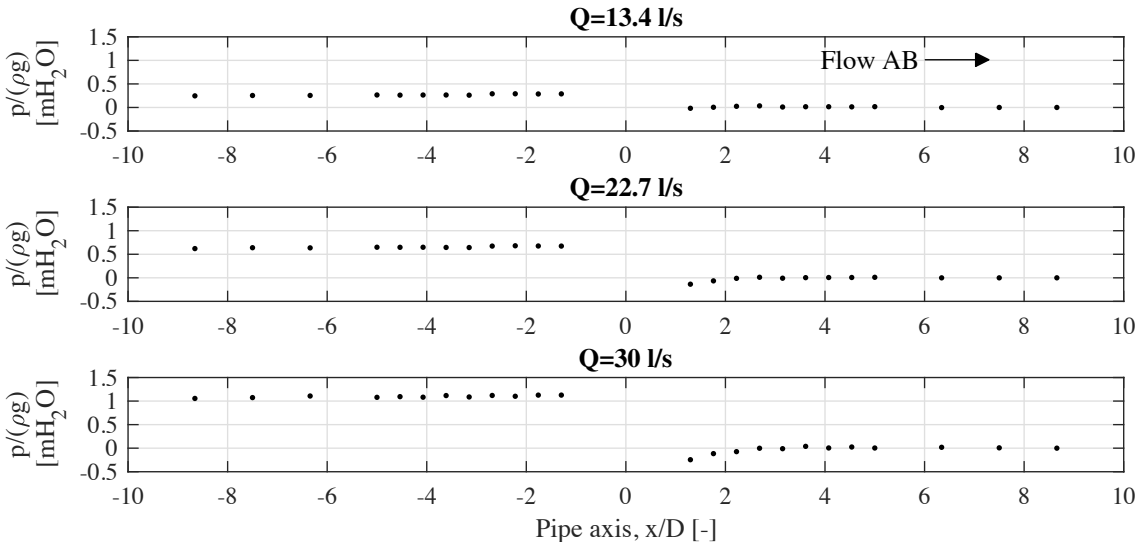
Jet length

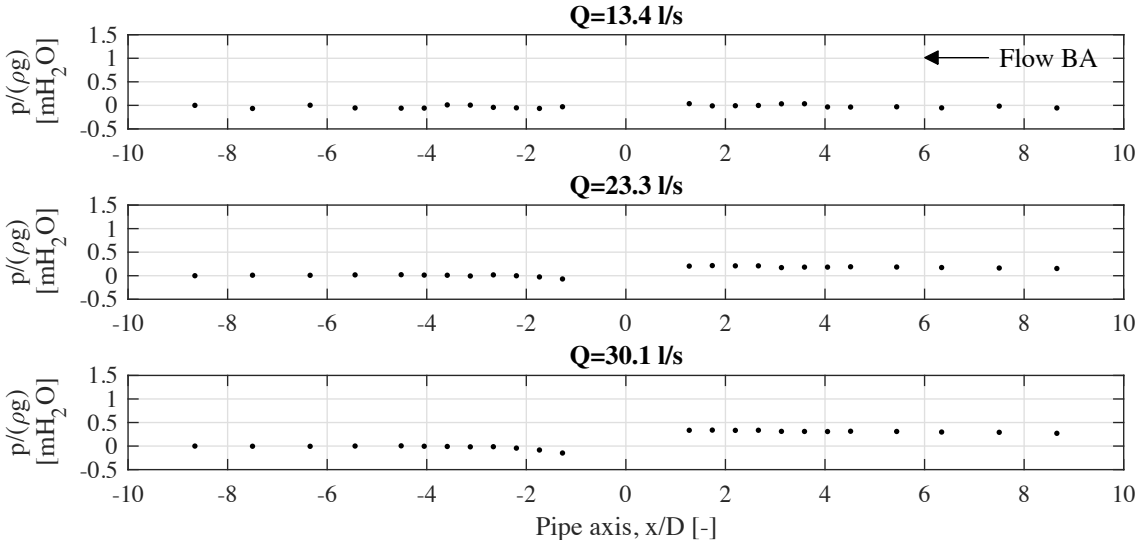
$L_{j,AB}$	3.63
$L_{j,BA}$	4.26

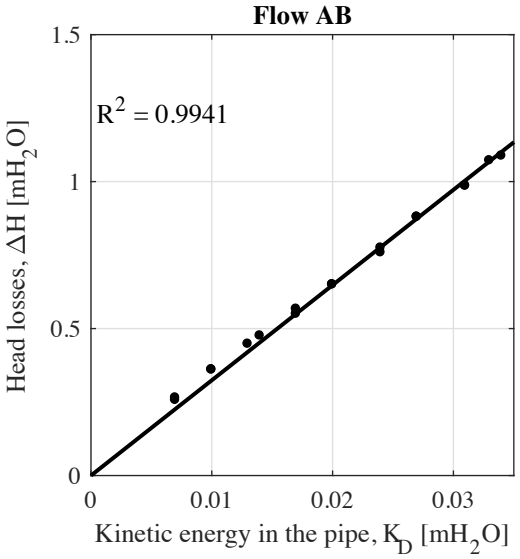


Geometrical parameters

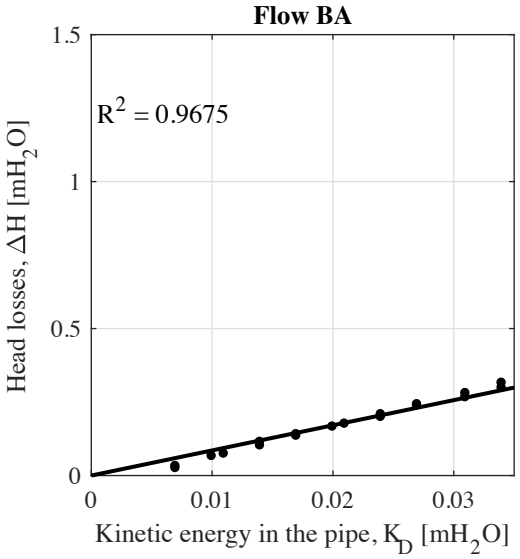
d	107.0	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	8.4	[mm]	α_i	*0.039*	*[-]*
b	44.8	[mm]	β_b	0.207	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
13.2	0.007	0.256
13.4	0.007	0.264
16.3	0.010	0.360
16.3	0.010	0.359
18.8	0.013	0.447
19.1	0.014	0.475
20.9	0.017	0.549
21.0	0.017	0.566
22.7	0.020	0.649
22.7	0.020	0.649
24.9	0.024	0.758
25.0	0.024	0.774
26.7	0.027	0.879
26.8	0.027	0.879
28.4	0.031	0.985
28.4	0.031	0.985
29.7	0.033	1.071
30.0	0.034	1.087



Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.031
13.4	0.007	0.024
16.4	0.010	0.065
16.7	0.011	0.073
19.1	0.014	0.101
19.5	0.014	0.113
21.2	0.017	0.139
21.2	0.017	0.134
23.2	0.020	0.165
23.3	0.021	0.175
24.9	0.024	0.198
25.1	0.024	0.207
26.7	0.027	0.241
26.9	0.027	0.237
28.4	0.031	0.265
28.6	0.031	0.279
30.1	0.034	0.314
30.1	0.034	0.297

Orifice : **EXP_020**

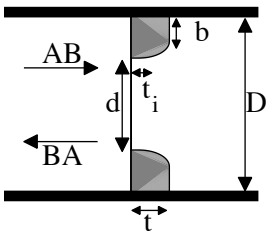
Type : rounded orifice

Head loss coefficients

k_{AB}	32.9 ±0.56
k_{BA}	8.6 ±0.28
λ	0.26

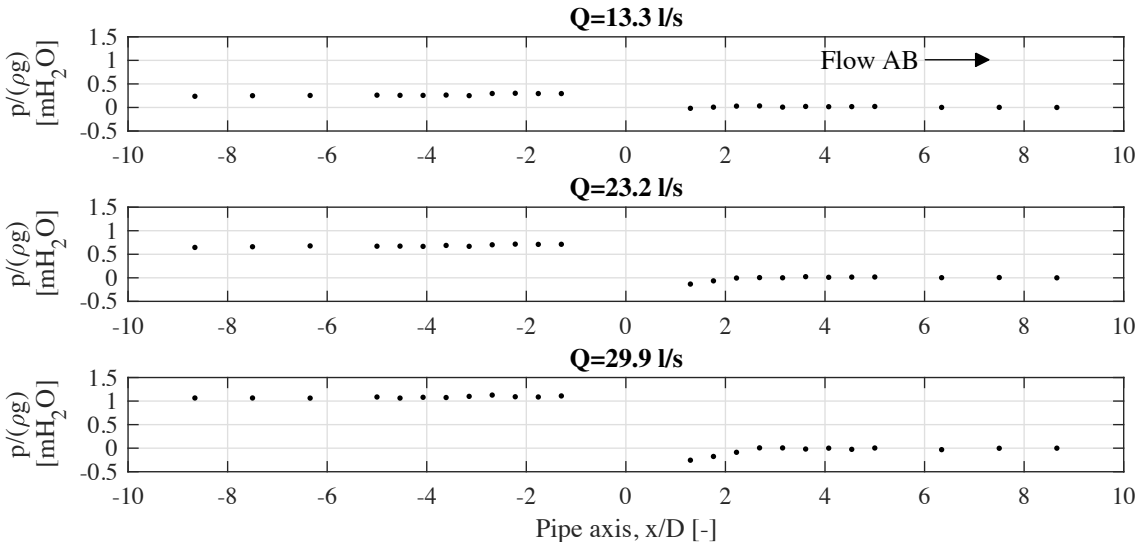
Jet length

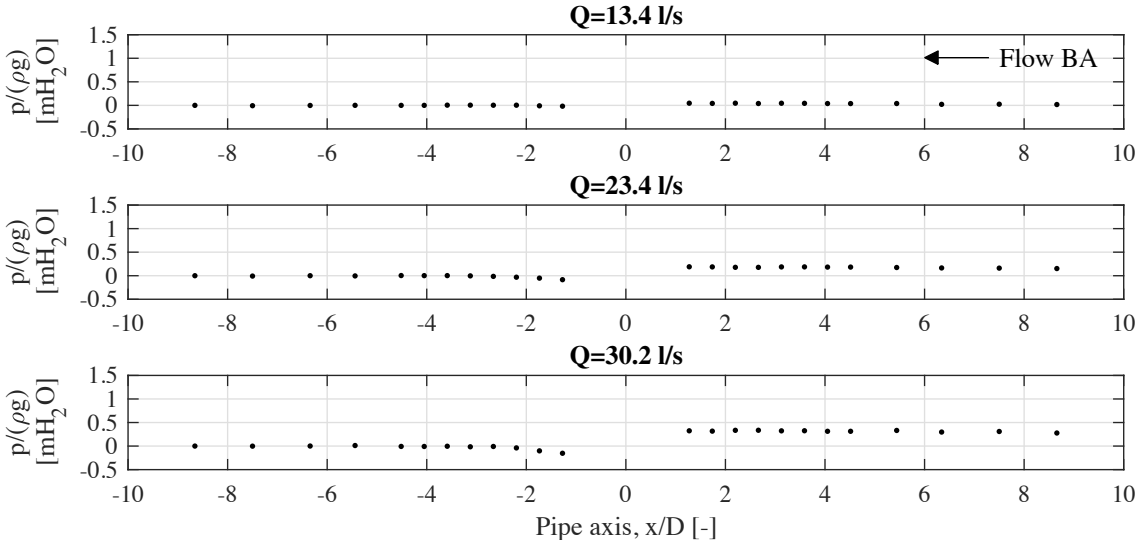
$L_{j,AB}$	3.46
$L_{j,BA}$	3.61

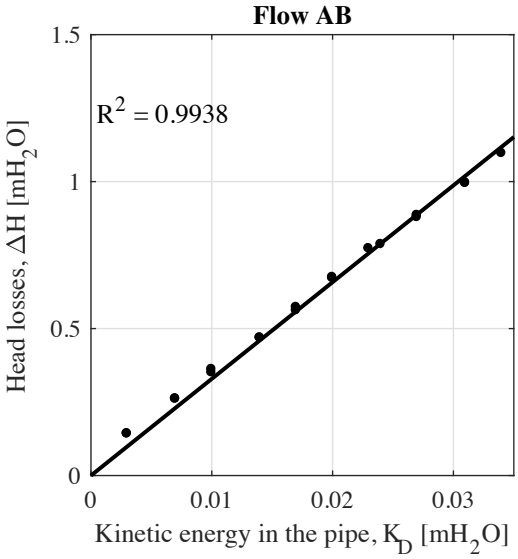


Geometrical parameters

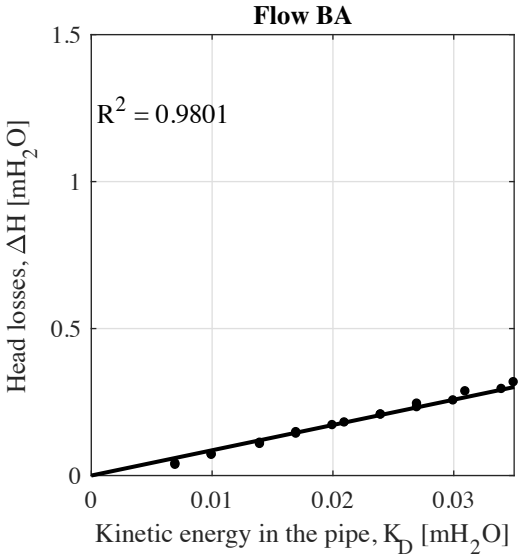
d	107.0	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	8.1	[mm]	α_i	*0.038*	*[-]*
b	34.9	[mm]	β_b	0.162	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.3	0.003	0.142
9.3	0.003	0.142
13.3	0.007	0.260
13.3	0.007	0.261
16.1	0.010	0.350
16.3	0.010	0.361
18.9	0.014	0.468
19.0	0.014	0.468
20.9	0.017	0.561
21.2	0.017	0.572
23.1	0.020	0.671
23.2	0.020	0.674
24.8	0.023	0.772
25.1	0.024	0.786
26.6	0.027	0.885
26.8	0.027	0.878
28.5	0.031	0.996
28.5	0.031	0.994
29.9	0.034	1.096



Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.035
13.4	0.007	0.039
16.2	0.010	0.071
16.3	0.010	0.069
19.0	0.014	0.110
19.1	0.014	0.106
21.2	0.017	0.141
21.4	0.017	0.146
23.2	0.020	0.170
23.4	0.021	0.179
24.9	0.024	0.206
25.2	0.024	0.206
26.8	0.027	0.243
26.8	0.027	0.231
28.2	0.030	0.254
28.6	0.031	0.285
30.1	0.034	0.293
30.2	0.035	0.316
29.9	0.034	1.096

Orifice : **EXP_021**

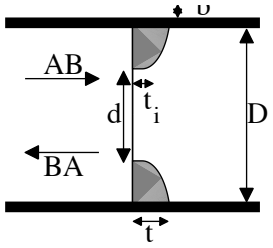
Type : rounded orifice

Head loss coefficients

k_{AB}	32.7 ±0.56
k_{BA}	9.1 ±0.25
λ	0.28

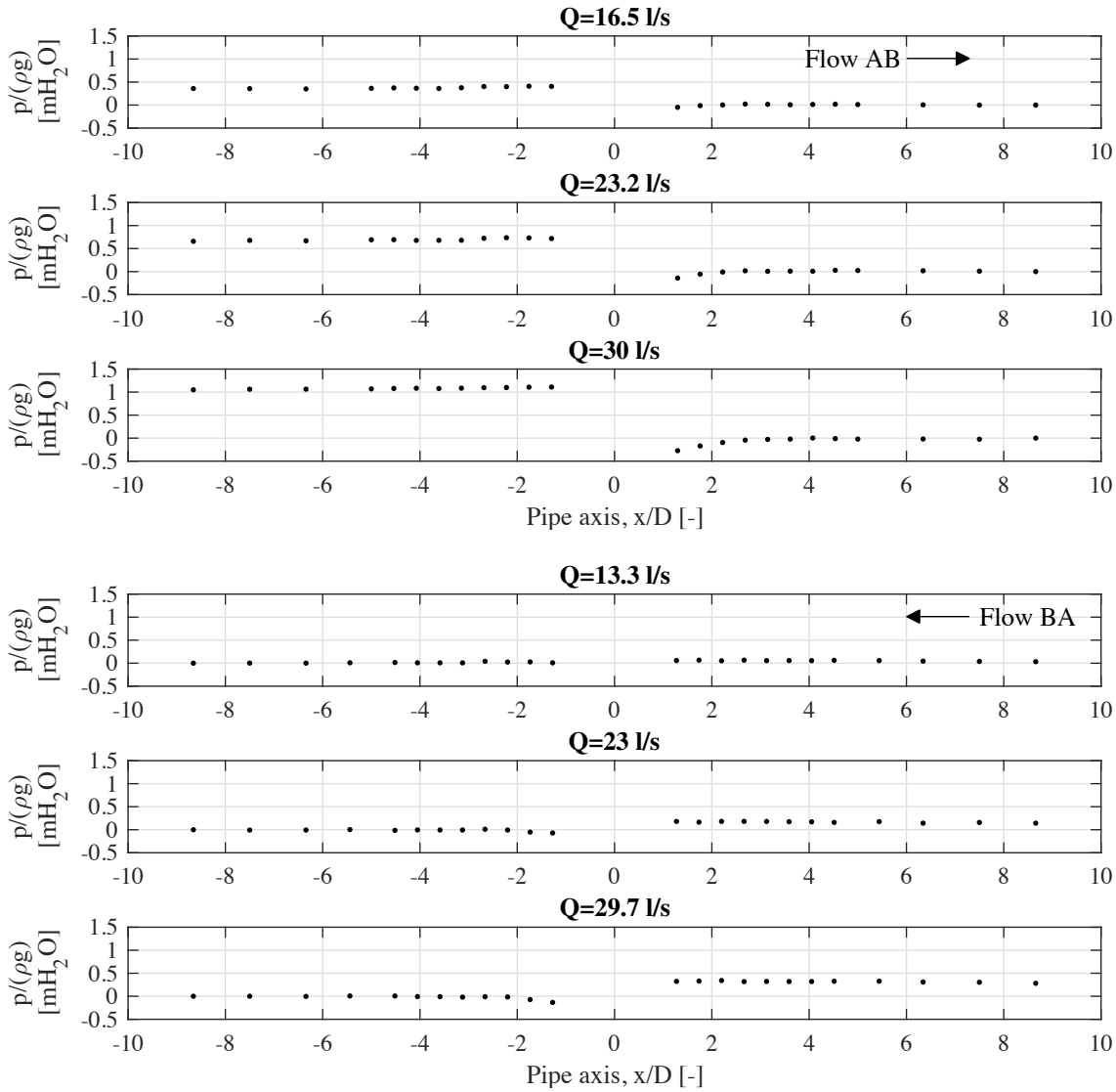
Jet length

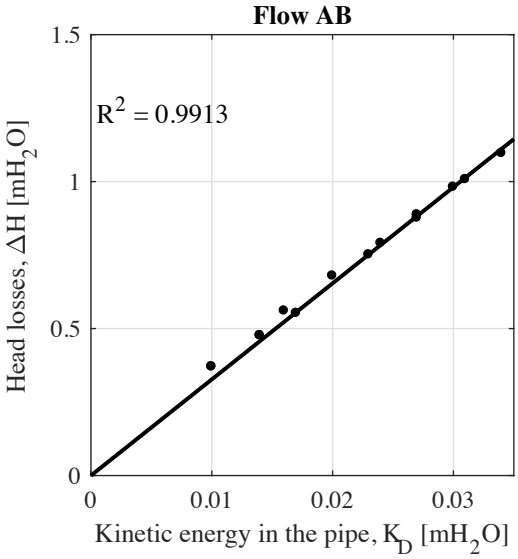
$L_{j,AB}$	3.50
$L_{j,BA}$	3.56



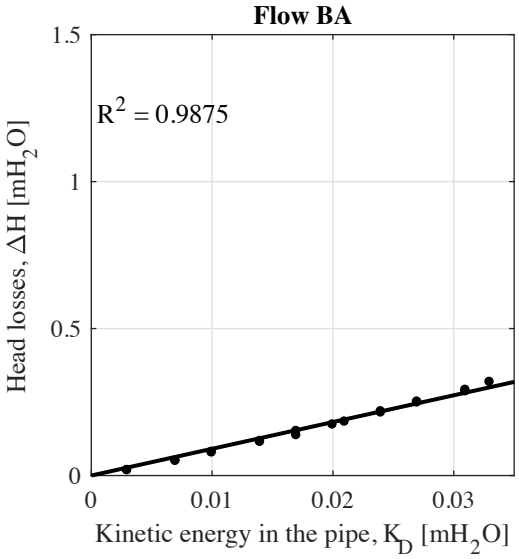
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	10.0	[mm]	α_i	*0.046*	*[-]*
b	0.0	[mm]	β_b	0.0	*[-]*





Q [l/s]	K_D [m]	ΔH [m]
9.3	0.003	0.142
9.3	0.003	0.142
13.3	0.007	0.260
13.3	0.007	0.261
16.1	0.010	0.350
16.3	0.010	0.361
18.9	0.014	0.468
19.0	0.014	0.468
20.9	0.017	0.561
21.2	0.017	0.572
23.1	0.020	0.671
23.2	0.020	0.674
24.8	0.023	0.772
25.1	0.024	0.786
26.6	0.027	0.885
26.8	0.027	0.878
28.5	0.031	0.996
28.5	0.031	0.994
29.9	0.034	1.096



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.017
9.5	0.003	0.017
13.3	0.007	0.049
13.6	0.007	0.049
16.3	0.010	0.079
16.3	0.010	0.077
19.0	0.014	0.113
19.1	0.014	0.116
21.0	0.017	0.136
21.3	0.017	0.150
23.0	0.020	0.172
23.3	0.021	0.182
24.9	0.024	0.213
25.1	0.024	0.217
26.7	0.027	0.247
26.7	0.027	0.250
28.4	0.031	0.285
28.5	0.031	0.290
29.7	0.033	0.317
30.6	0.036	0.341

Orifice : **EXP_022**

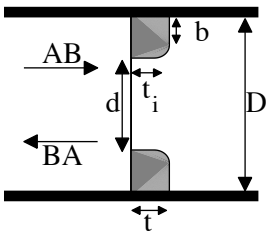
Type : rounded orifice

Head loss coefficients

k_{AB}	30.75 ±0.64
k_{BA}	8.0 ±0.49
λ	0.26

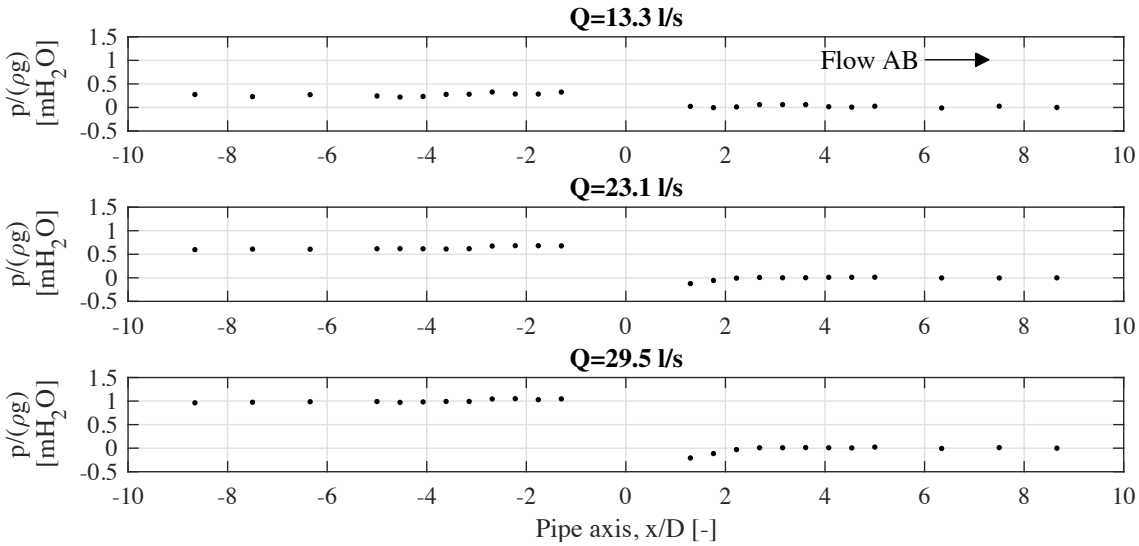
Jet length

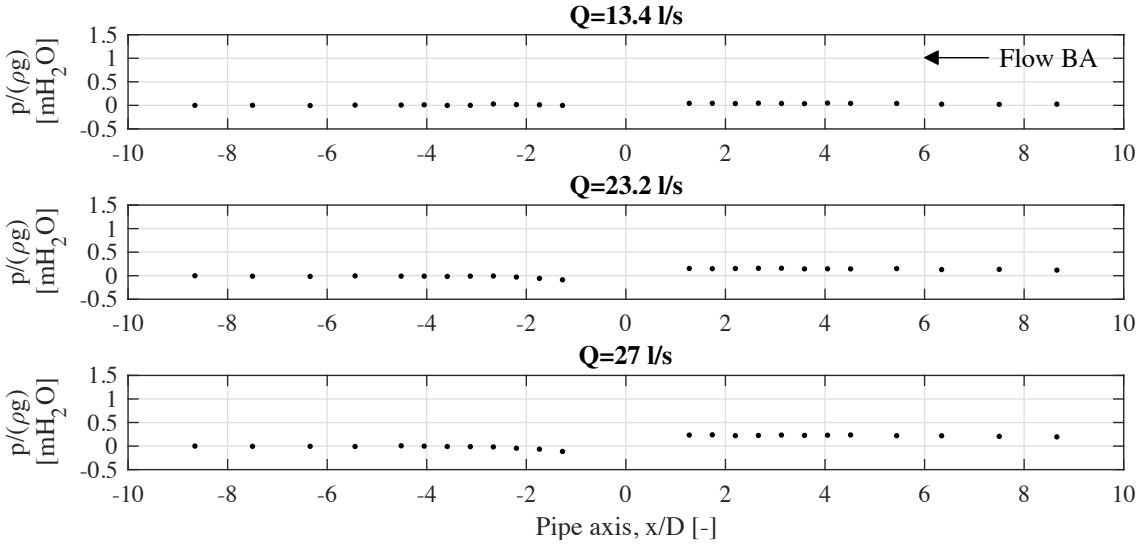
$L_{j,AB}$	3.83
$L_{j,BA}$	4.06

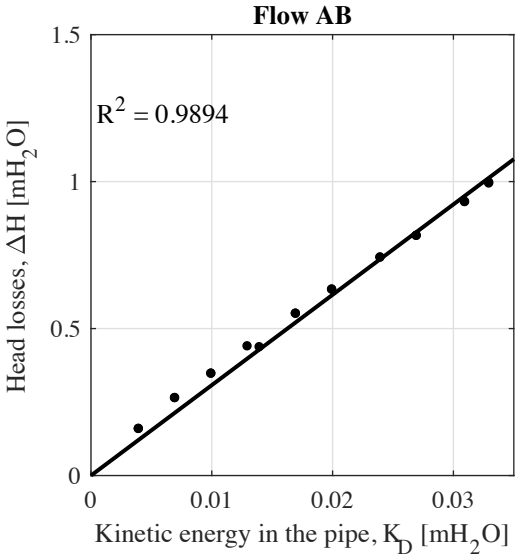


Geometrical parameters

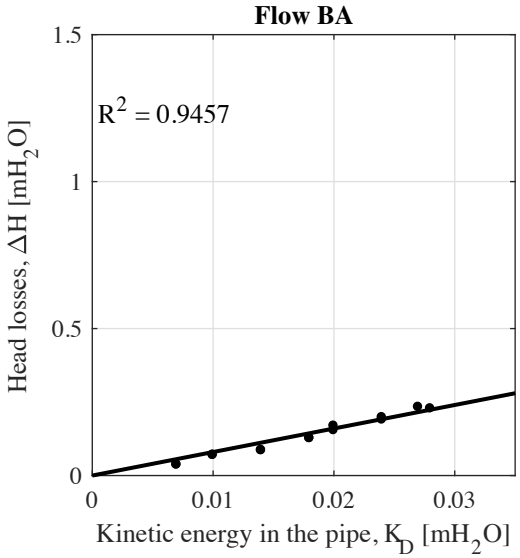
d	107.0	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	26.0	[mm]	α_i	*0.12*	*[-]*
b	38.0	[mm]	β_b	0.176	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.157
9.7	0.004	0.157
13.3	0.007	0.262
13.3	0.007	0.262
16.3	0.010	0.345
16.3	0.010	0.345
18.8	0.013	0.438
19.1	0.014	0.435
21.3	0.017	0.549
21.3	0.017	0.549
23.1	0.020	0.631
23.1	0.020	0.631
25.0	0.024	0.740
25.0	0.024	0.740
26.6	0.027	0.814
26.6	0.027	0.814
28.5	0.031	0.929
28.5	0.031	0.929
29.5	0.033	0.995
29.5	0.033	0.992



Q [l/s]	K_D [m]	ΔH [m]
13.4	0.007	0.036
13.4	0.007	0.036
16.5	0.010	0.069
16.5	0.010	0.069
19.2	0.014	0.085
19.2	0.014	0.085
21.8	0.018	0.126
21.8	0.018	0.126
23.2	0.020	0.153
23.2	0.020	0.168
25.0	0.024	0.197
25.1	0.024	0.189
26.8	0.027	0.232
27.0	0.028	0.227

Orifice : **EXP_023**

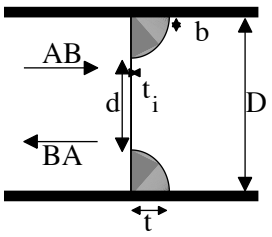
Type : rounded orifice

Head loss coefficients

k_{AB}	31.46 ±0.30
k_{BA}	12.6 ±0.07
λ	0.40

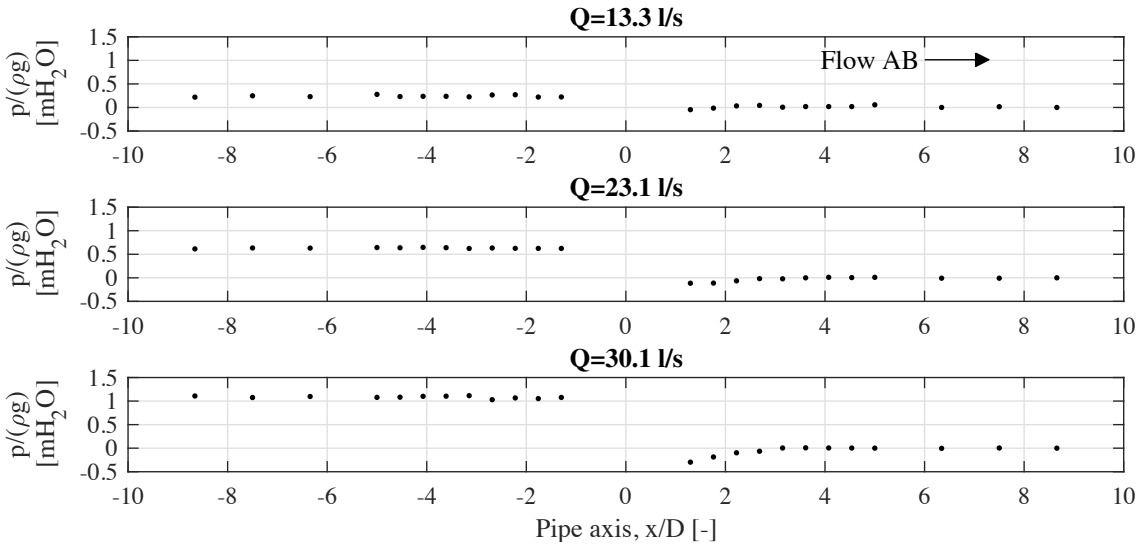
Jet length

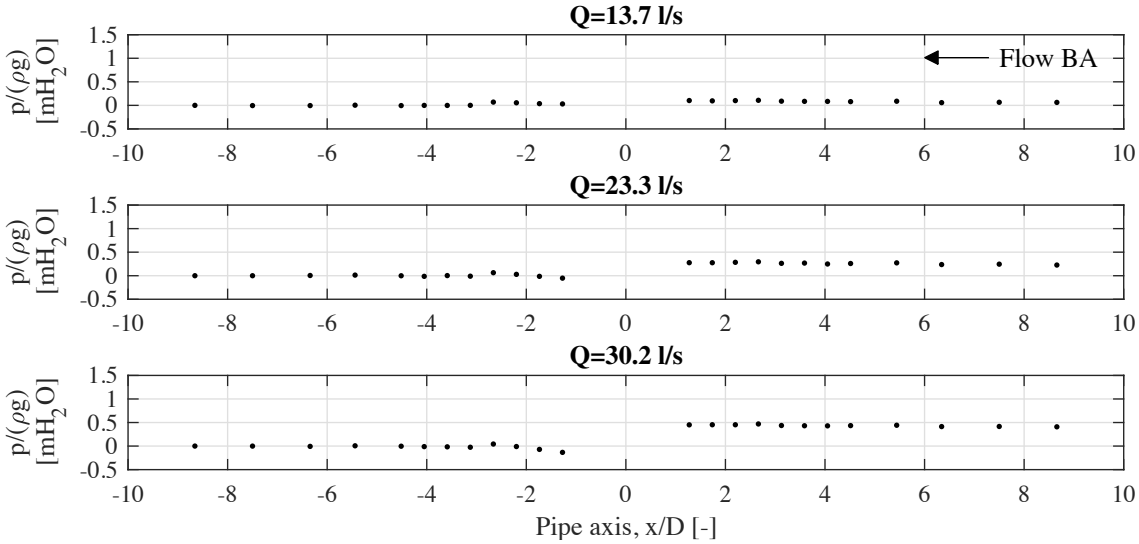
$L_{j,AB}$	3.41
$L_{j,BA}$	4.25

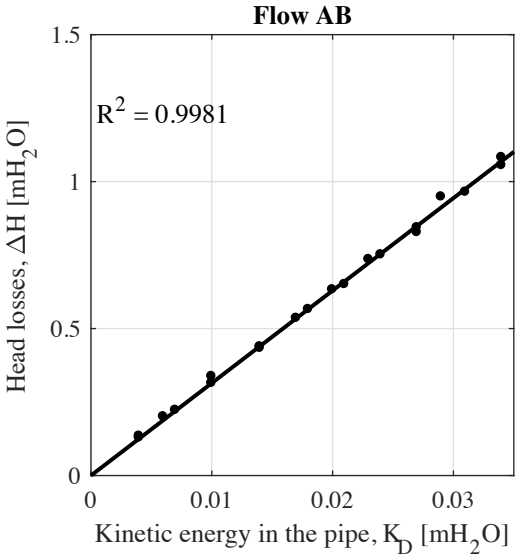


Geometrical parameters

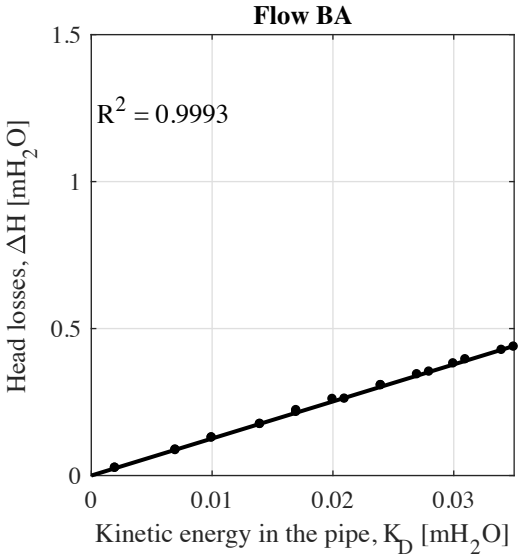
d	107.0	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	0.0	[mm]	α_i	*0.0*	*[-]*
b	4.0	[mm]	β_b	0.019	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.134
9.9	0.004	0.128
12.4	0.006	0.200
13.3	0.007	0.222
16.0	0.010	0.314
16.5	0.010	0.337
18.9	0.014	0.433
19.0	0.014	0.438
21.1	0.017	0.535
21.6	0.018	0.565
23.1	0.020	0.632
23.3	0.021	0.650
24.8	0.023	0.735
25.2	0.024	0.751
26.7	0.027	0.843
26.7	0.027	0.827
27.8	0.029	0.948
28.4	0.031	0.964
29.9	0.034	1.055
30.1	0.034	1.082



Q [l/s]	K_D [m]	ΔH [m]
7.9	0.002	0.025
7.9	0.002	0.025
13.4	0.007	0.085
13.7	0.007	0.087
16.4	0.010	0.128
16.4	0.010	0.128
18.9	0.014	0.174
19.1	0.014	0.174
21.2	0.017	0.215
21.4	0.017	0.221
23.2	0.020	0.259
23.3	0.021	0.260
25.1	0.024	0.306
25.1	0.024	0.306
26.8	0.027	0.343
27.1	0.028	0.352
28.2	0.030	0.380
28.7	0.031	0.394
29.8	0.034	0.426
30.2	0.035	0.437

Orifice : **EXP_024**

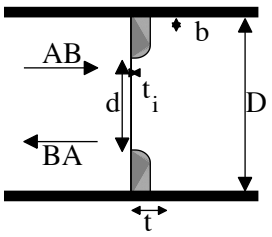
Type : rounded orifice

Head loss coefficients

k_{AB}	30.0 ±0.24
k_{BA}	13.0 ±0.38
λ	0.43

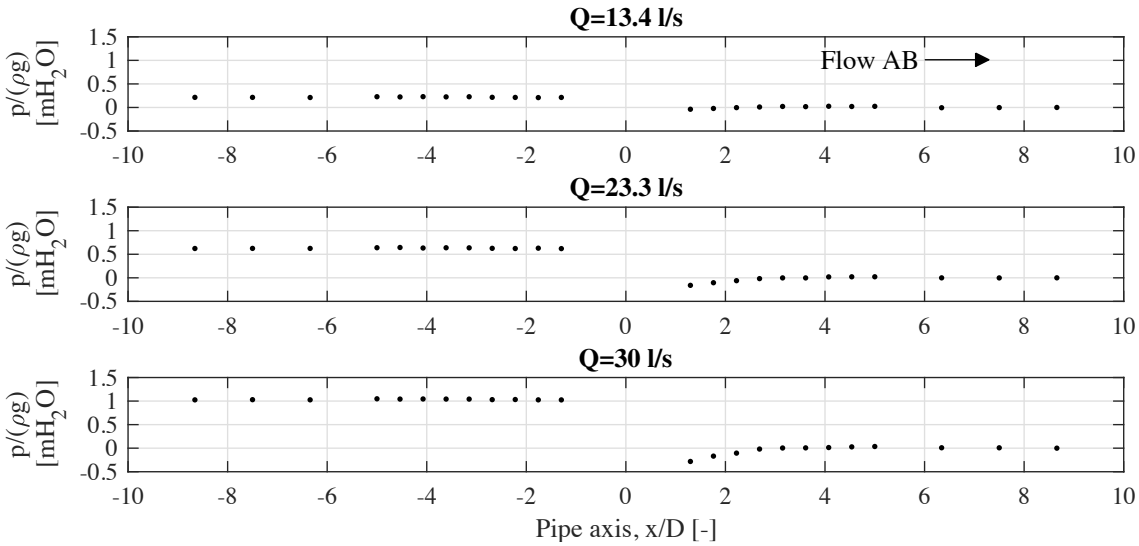
Jet length

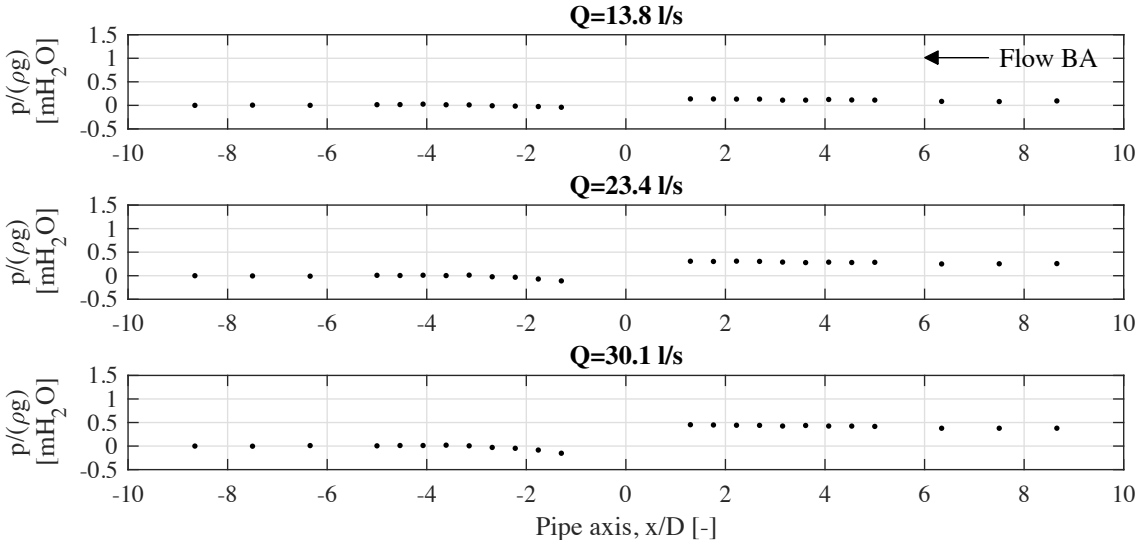
$L_{j,AB}$	3.44
$L_{j,BA}$	3.85

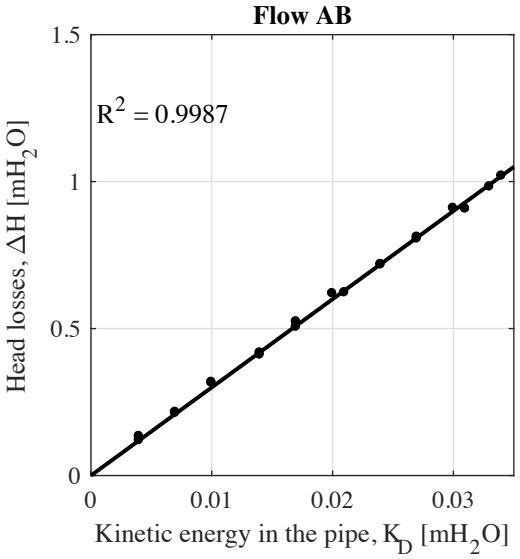


Geometrical parameters

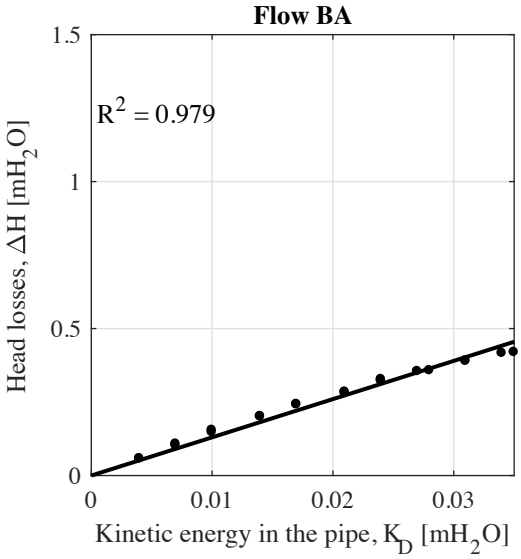
d	107.0	[mm]	β	*0.495*	*[-]*
t	21.5	[mm]	α	*0.100*	*[-]*
t_i	4.0	[mm]	α_i	*0.019*	*[-]*
b	38.0	[mm]	β_b	0.176	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.119
9.9	0.004	0.133
13.4	0.007	0.212
13.6	0.007	0.215
16.4	0.010	0.315
16.6	0.010	0.317
19.1	0.014	0.417
19.5	0.014	0.410
21.0	0.017	0.505
21.4	0.017	0.523
23.2	0.020	0.619
23.3	0.021	0.622
25.1	0.024	0.718
25.2	0.024	0.717
26.5	0.027	0.805
26.6	0.027	0.811
28.3	0.030	0.909
28.4	0.031	0.907
29.6	0.033	0.982
30.0	0.034	1.019



Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.057
9.9	0.004	0.057
13.5	0.007	0.102
13.8	0.007	0.107
16.3	0.010	0.147
16.6	0.010	0.154
19.2	0.014	0.200
19.2	0.014	0.201
21.2	0.017	0.242
21.2	0.017	0.241
23.3	0.021	0.281
23.4	0.021	0.284
25.2	0.024	0.322
25.4	0.024	0.327
26.9	0.027	0.354
27.0	0.028	0.357
28.5	0.031	0.390
28.7	0.031	0.389
30.1	0.034	0.416
30.2	0.035	0.419

Orifice : **EXP_025**

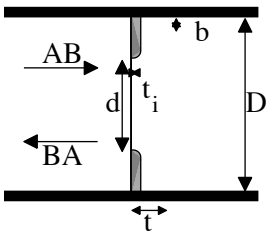
Type : rounded orifice

Head loss coefficients

k_{AB}	31.25 ±0.54
k_{BA}	16.4 ±0.46
λ	0.53

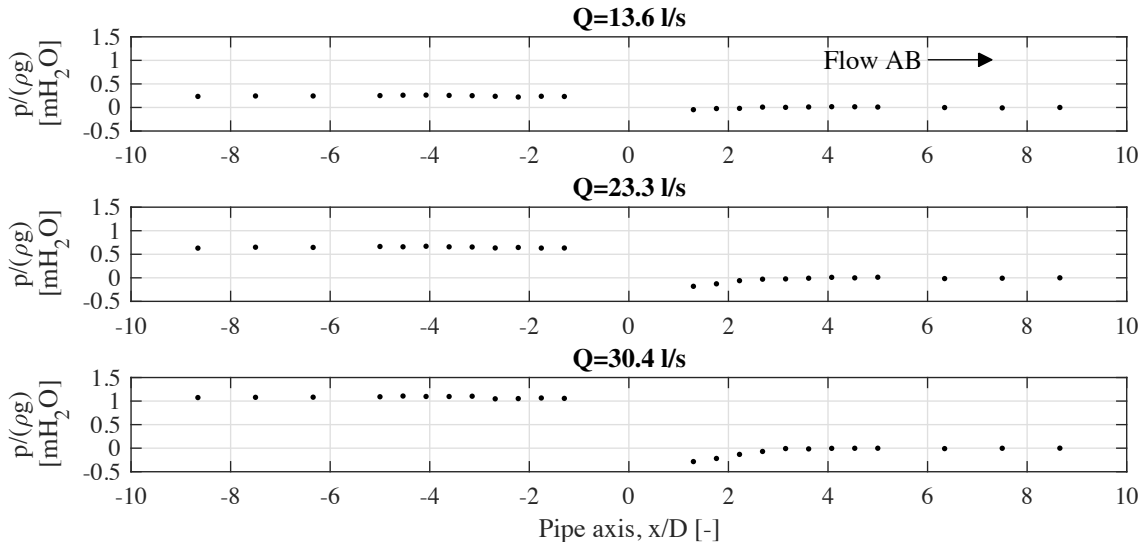
Jet length

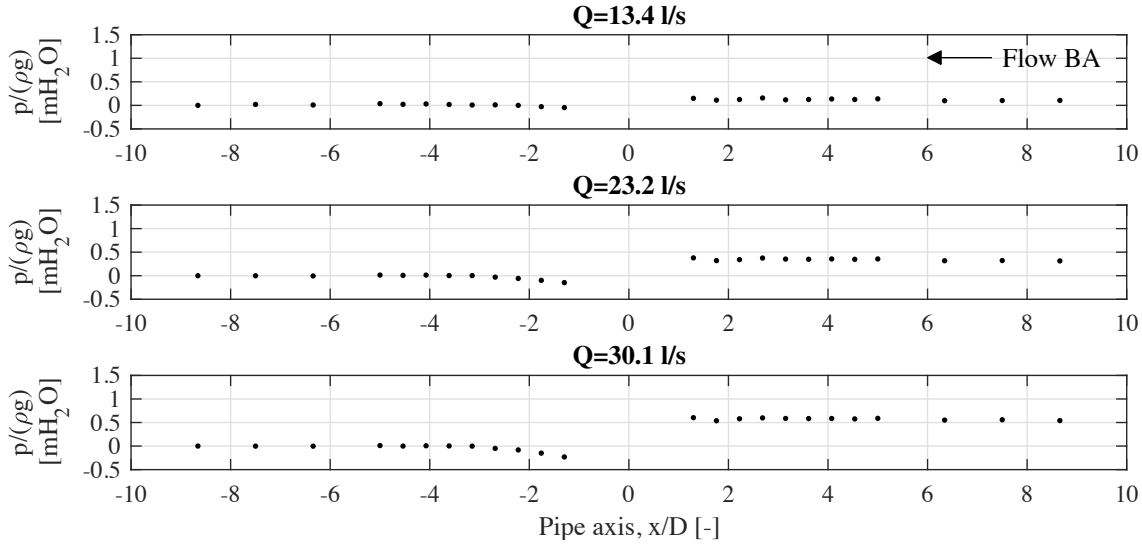
$L_{j,AB}$	3.48
$L_{j,BA}$	3.74

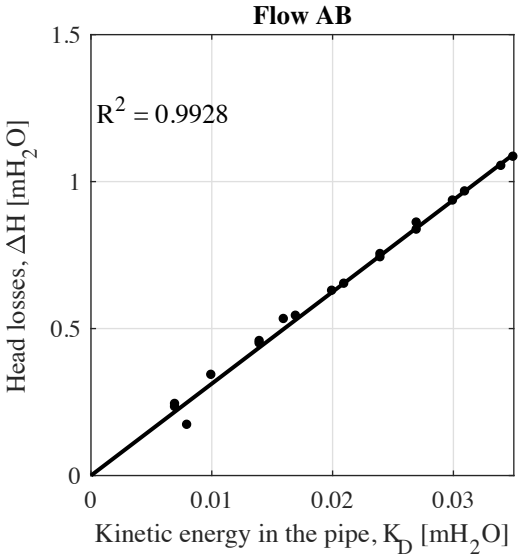


Geometrical parameters

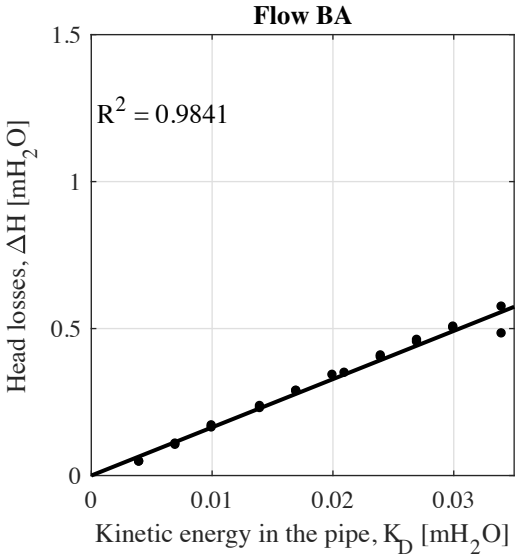
d	107.0	[mm]	β	*0.495*	*[-]*
t	11.0	[mm]	α	*0.051*	*[-]*
t_i	1.5	[mm]	α_i	*0.007*	*[-]*
b	46.0	[mm]	β_b	0.213	*[-]*







Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.232
13.6	0.007	0.242
14.8	0.008	0.171
16.4	0.010	0.341
19.0	0.014	0.448
19.4	0.014	0.456
20.8	0.016	0.531
21.2	0.017	0.542
22.9	0.020	0.627
23.3	0.021	0.651
25.0	0.024	0.741
25.2	0.024	0.752
26.7	0.027	0.835
26.9	0.027	0.859
28.1	0.030	0.934
28.7	0.031	0.965
30.0	0.034	1.052
30.4	0.035	1.083



Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.046
9.8	0.004	0.046
13.4	0.007	0.107
13.5	0.007	0.103
16.2	0.010	0.162
16.6	0.010	0.169
19.1	0.014	0.228
19.3	0.014	0.235
21.2	0.017	0.286
21.4	0.017	0.287
23.2	0.020	0.341
23.4	0.021	0.348
25.0	0.024	0.401
25.2	0.024	0.407
26.8	0.027	0.453
26.9	0.027	0.460
28.1	0.030	0.501
28.2	0.030	0.505
30.0	0.034	0.482
30.1	0.034	0.573

Orifice : **EXP_026**

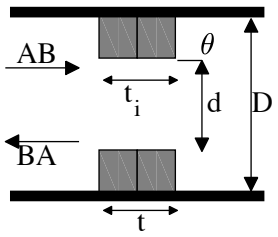
Type : chamfered orifice

Head loss coefficients

k_{AB}	17.17 ±0.20
k_{BA}	18.20 ±0.20
λ	0.94

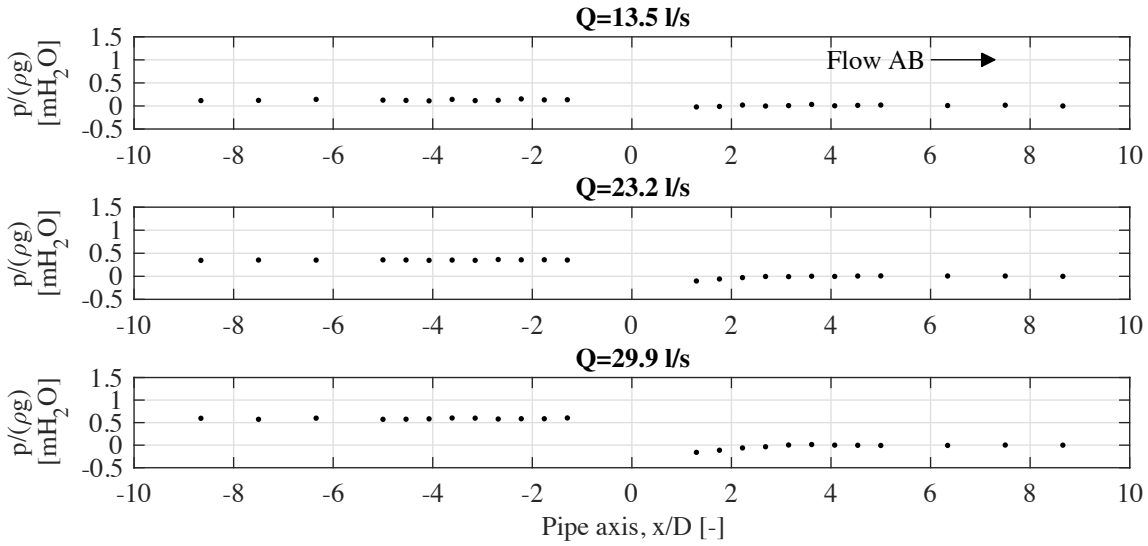
Jet length

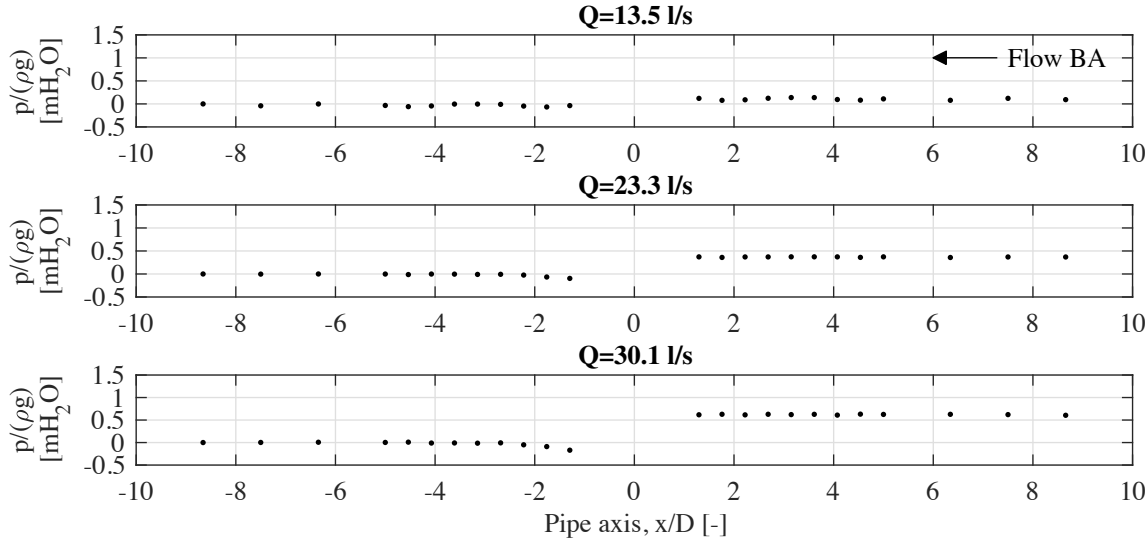
$L_{j,AB}$	3.91
$L_{j,BA}$	4.08

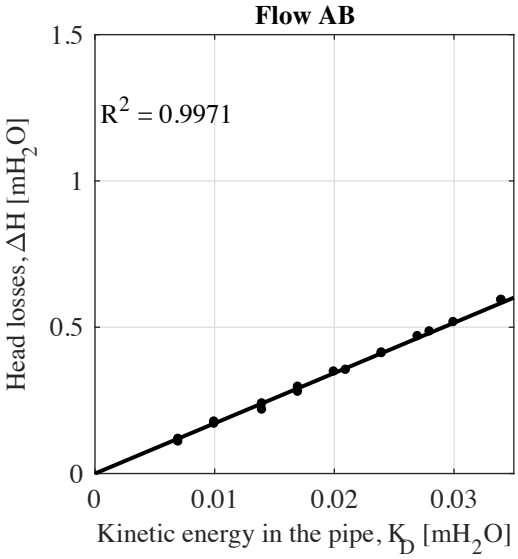


Geometrical parameters

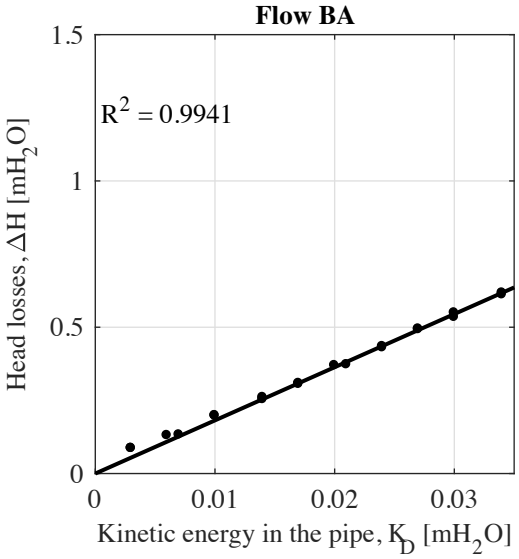
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	86.0	[mm]	α_i	*0.398*	*[-]*
θ_L	0	*[deg]*	θ_R	0	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.4000	0.0070	0.1080
13.5000	0.0070	0.1170
16.3000	0.0100	0.1690
16.5000	0.0100	0.1760
19.1000	0.0140	0.2380
19.3000	0.0140	0.2170
20.9000	0.0170	0.2780
21.4000	0.0170	0.2950
23.2000	0.0200	0.3470
23.3000	0.0210	0.3530
25.1000	0.0240	0.4100
25.2000	0.0240	0.4120
26.8000	0.0270	0.4680
27.3000	0.0280	0.4840
28.1000	0.0300	0.5160
29.9000	0.0340	0.5910
30.1000	0.0340	0.5920



Q [l/s]	K_D [m]	ΔH [m]
9.6000	0.0030	0.0860
9.6000	0.0030	0.0860
13.0000	0.0060	0.1300
13.5000	0.0070	0.1320
16.4000	0.0100	0.1980
16.4000	0.0100	0.1970
19.0000	0.0140	0.2530
19.3000	0.0140	0.2600
21.1000	0.0170	0.3050
21.3000	0.0170	0.3080
23.2000	0.0200	0.3690
23.3000	0.0210	0.3720
25.1000	0.0240	0.4300
25.2000	0.0240	0.4340
26.9000	0.0270	0.4920
26.9000	0.0270	0.4940
28.0000	0.0300	0.5340
28.3000	0.0300	0.5490
29.9000	0.0340	0.6110
30.1000	0.0340	0.6170

Orifice : **EXP_027**

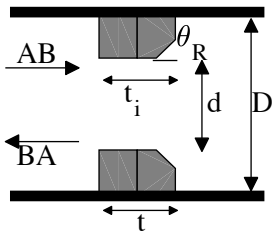
Type : chamfered orifice

Head loss coefficients

k_{AB}	18.92 ±0.23
k_{BA}	12.27 ±0.16
λ	0.65

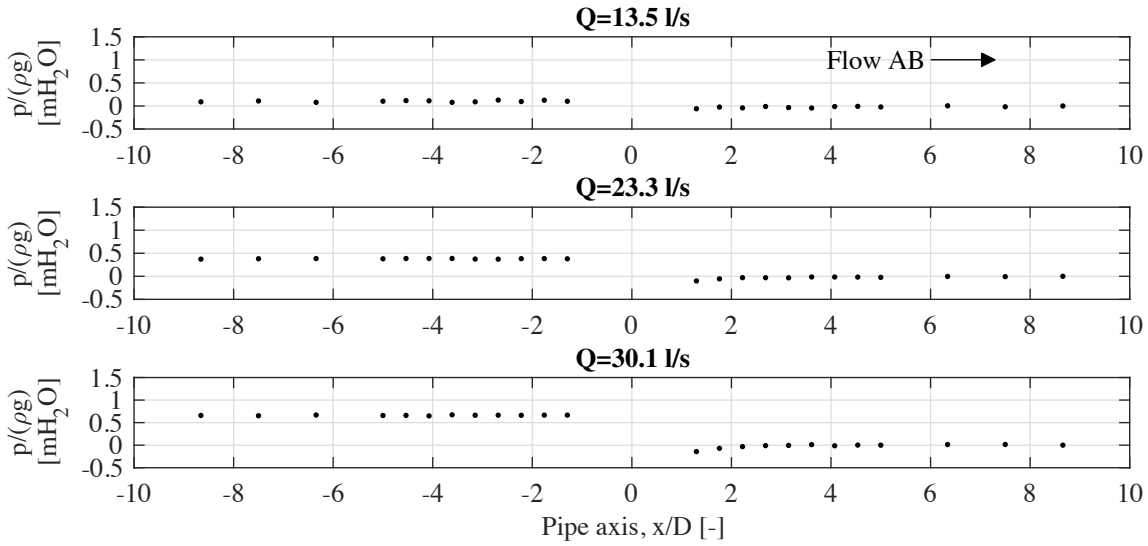
Jet length

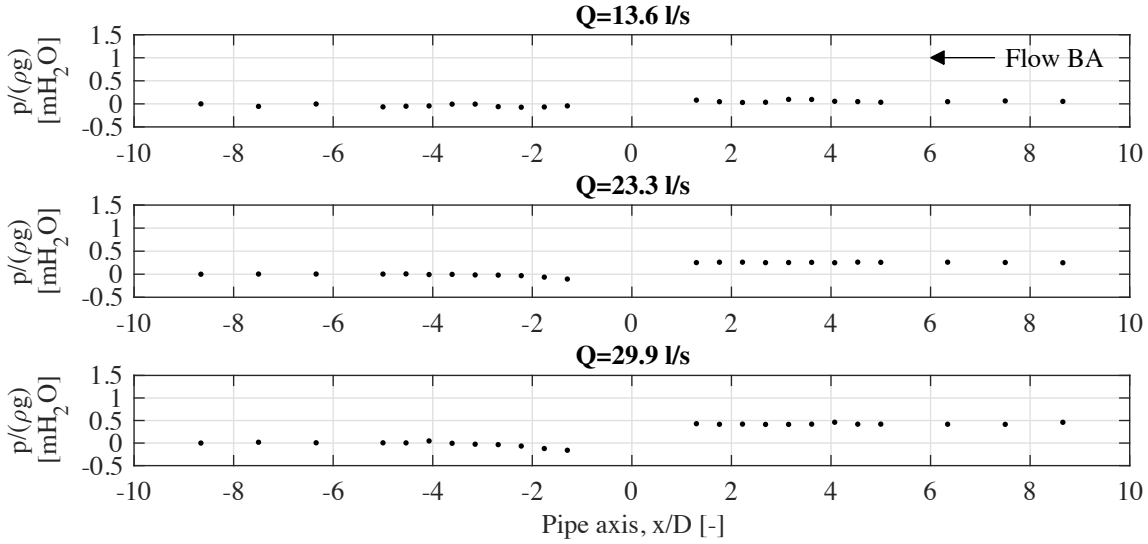
$L_{j,AB}$	3.69
$L_{j,BA}$	4.27

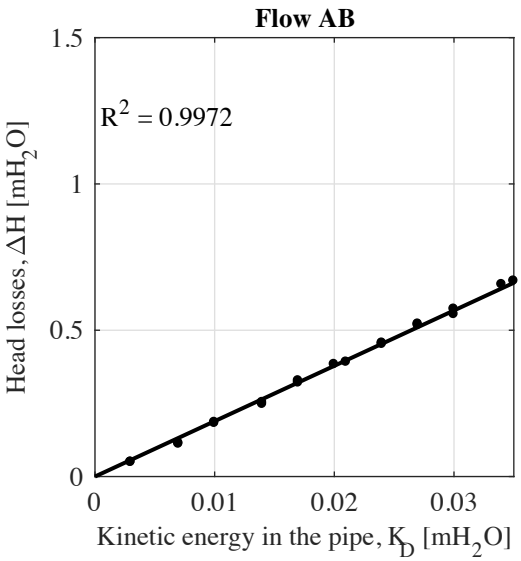


Geometrical parameters

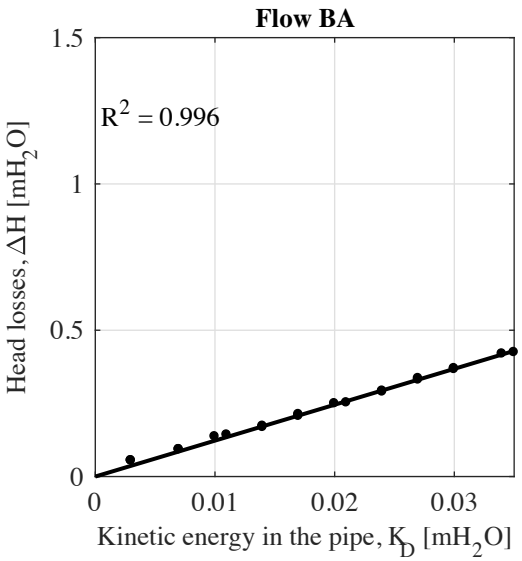
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	64.5	[mm]	α_i	*0.299*	*[-]*
θ_L	0	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.049
9.5	0.003	0.049
13.5	0.007	0.111
13.6	0.007	0.114
16.2	0.010	0.182
16.5	0.010	0.185
19.1	0.014	0.247
19.5	0.014	0.253
21.3	0.017	0.320
21.4	0.017	0.327
23.1	0.020	0.383
23.3	0.021	0.391
25. 0	0.024	0.452
25.2	0.024	0.456
26.8	0.027	0.517
26.9	0.027	0.521
28.2	0.030	0.554
28.2	0.030	0.572
30.1	0.034	0.656
30.4	0.035	0.668



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.054
9.5	0.003	0.054
13.3	0.007	0.092
13.6	0.007	0.092
16.6	0.01	0.136
16.9	0.011	0.142
19.1	0.014	0.168
19.3	0.014	0.172
21	0.017	0.206
21.3	0.017	0.212
23.2	0.02	0.249
23.3	0.021	0.252
25	0.024	0.289
25.1	0.024	0.292
26.8	0.027	0.33
26.9	0.027	0.335
28.2	0.03	0.366
28.3	0.03	0.369
29.9	0.034	0.419
30.3	0.035	0.424

Orifice : **EXP_028**

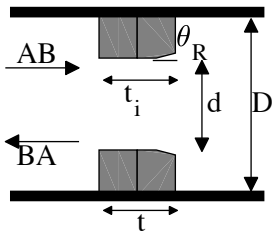
Type : chamfered orifice

Head loss coefficients

k_{AB}	16.57 ±0.25
k_{BA}	11.07 ±0.21
λ	0.67

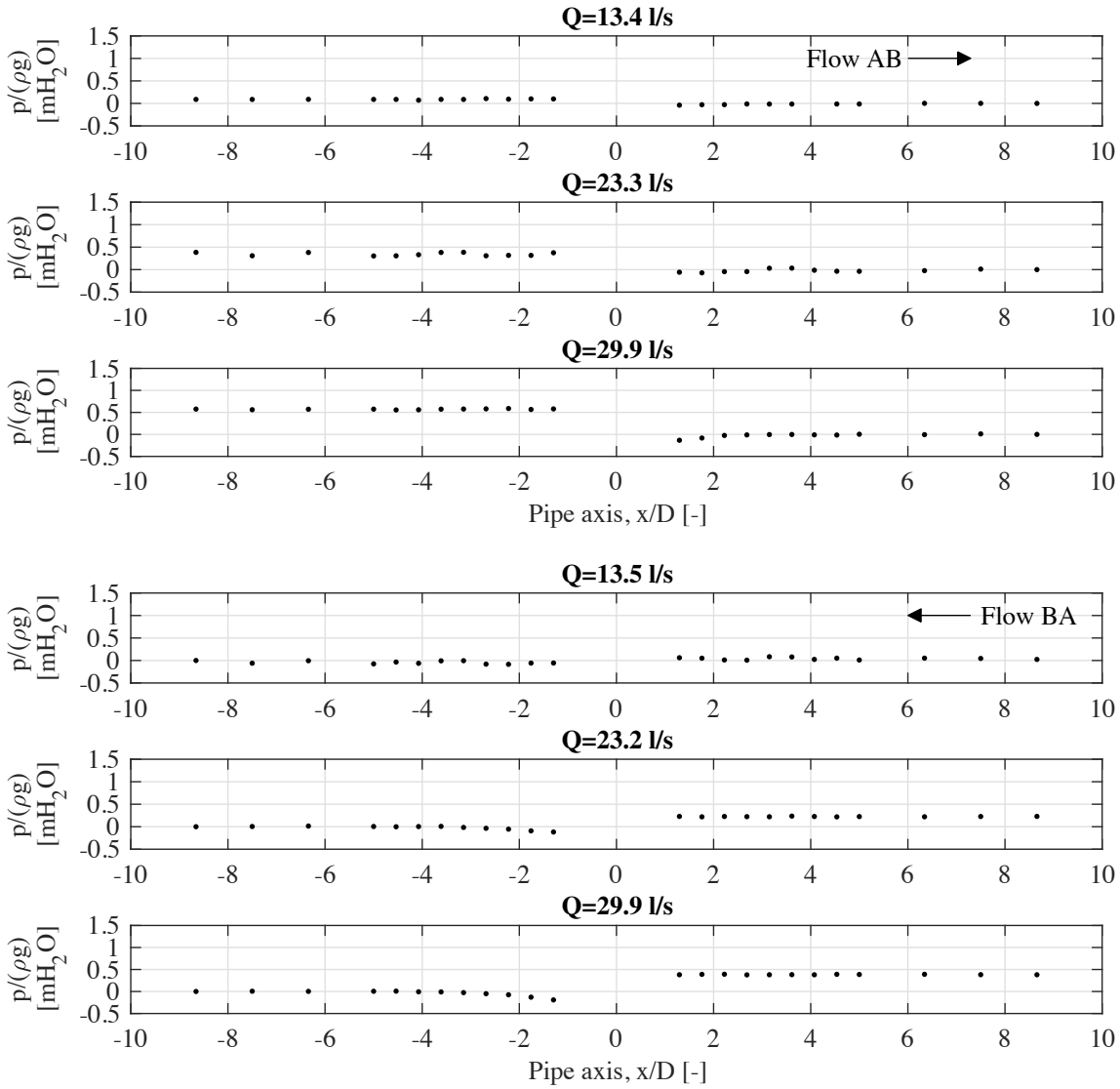
Jet length

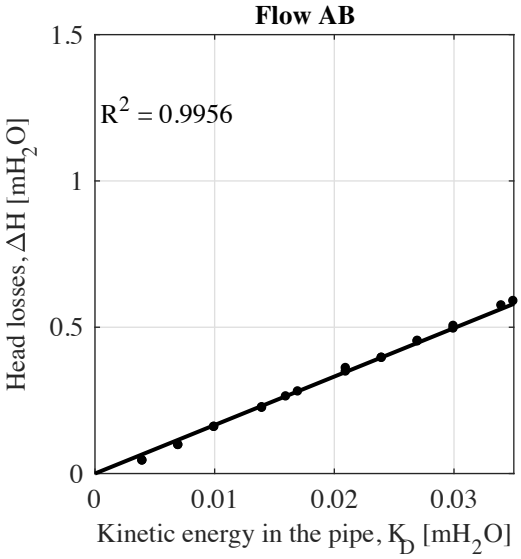
$L_{j,AB}$	3.44
$L_{j,BA}$	3.92



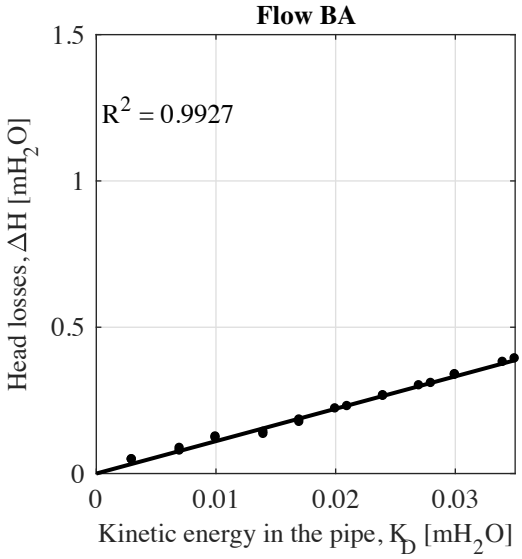
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	64.5	[mm]	α_i	*0.299*	*[-]*
θ_L	0	*[deg]*	θ_R	15	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.043
9.9	0.004	0.043
13.4	0.007	0.096
13.4	0.007	0.096
16.5	0.01	0.158
16.5	0.01	0.158
19.1	0.014	0.223
19.4	0.014	0.225
20.6	0.016	0.262
21.3	0.017	0.279
23.3	0.021	0.359
23.5	0.021	0.347
25	0.024	0.394
25.2	0.024	0.394
26.8	0.027	0.45
26.8	0.027	0.452
28.1	0.03	0.494
28.3	0.03	0.503
29.9	0.034	0.573
30.5	0.035	0.588



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.047
9.5	0.003	0.047
13.4	0.007	0.086
13.5	0.007	0.077
16.5	0.01	0.121
16.6	0.01	0.125
19.2	0.014	0.134
19.3	0.014	0.141
21.2	0.017	0.183
21.4	0.017	0.175
23.2	0.02	0.221
23.4	0.021	0.229
25.2	0.024	0.264
25.3	0.024	0.266
26.7	0.027	0.3
27.1	0.028	0.308
28.2	0.03	0.336
28.3	0.03	0.338
29.9	0.034	0.38
30.4	0.035	0.392

Orifice : **EXP_029**

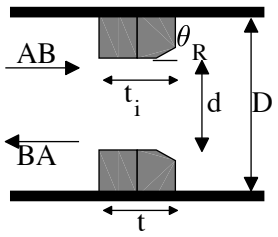
Type : chamfered orifice

Head loss coefficients

k_{AB}	17.60 ±0.26
k_{BA}	10.54 ±0.22
λ	0.60

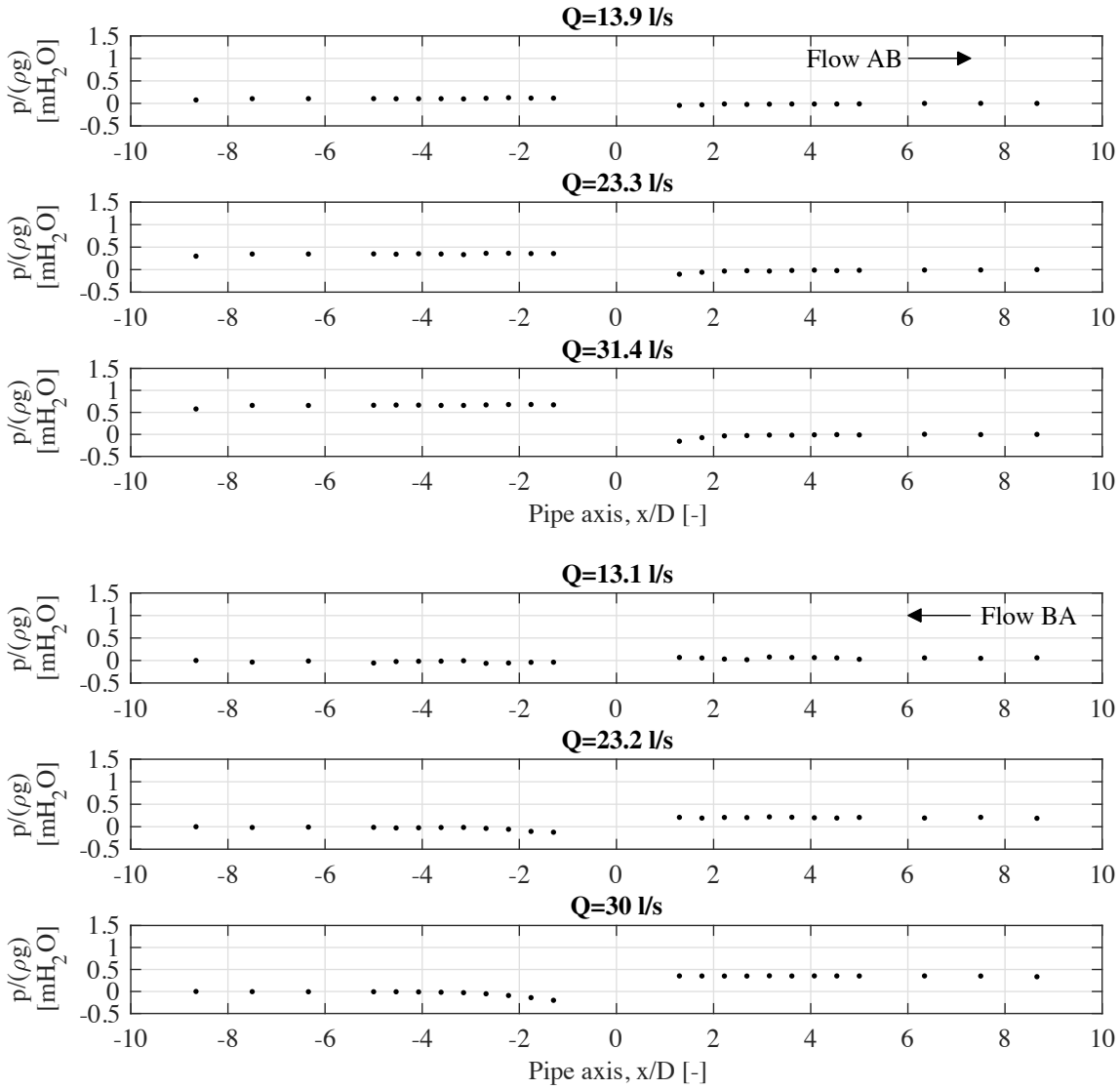
Jet length

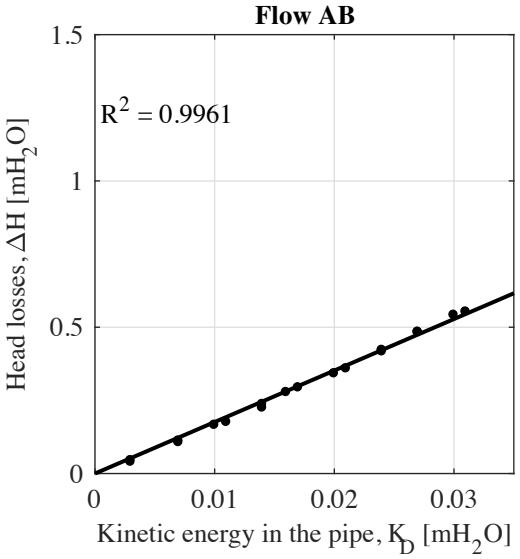
$L_{j,AB}$	3.42
$L_{j,BA}$	4.14



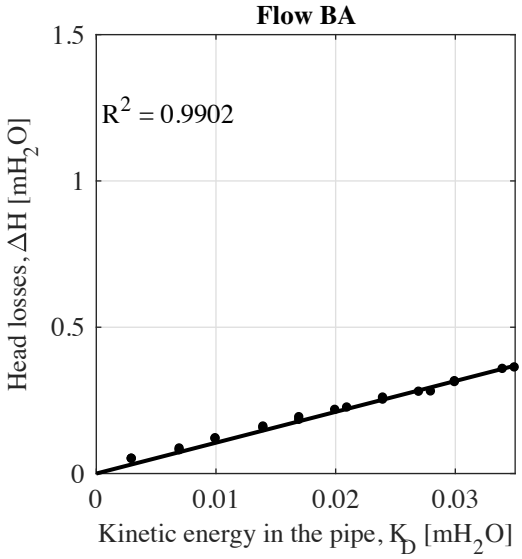
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	64.5	[mm]	α_i	*0.299*	*[-]*
θ_L	0	*[deg]*	θ_R	30	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.039
9.6	0.003	0.044
13.6	0.007	0.106
13.9	0.007	0.111
16.4	0.01	0.165
16.7	0.011	0.175
19	0.014	0.224
19.2	0.014	0.236
20.7	0.016	0.277
21.1	0.017	0.293
22.9	0.02	0.341
23.3	0.021	0.358
25	0.024	0.416
25.2	0.024	0.421
26.8	0.027	0.483
26.9	0.027	0.482
28.3	0.03	0.541
28.6	0.031	0.552
30.9	0.036	0.647
31.4	0.037	0.663



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.049
9.4	0.003	0.049
13.1	0.007	0.078
13.4	0.007	0.084
16.4	0.01	0.117
16.5	0.01	0.119
19.1	0.014	0.154
19.3	0.014	0.159
21	0.017	0.182
21.4	0.017	0.191
23.2	0.02	0.216
23.4	0.021	0.224
25	0.024	0.251
25.4	0.024	0.258
26.8	0.027	0.278
27	0.028	0.279
28.2	0.03	0.311
28.3	0.03	0.314
30	0.034	0.356
30.2	0.035	0.361

Orifice : **EXP_030**

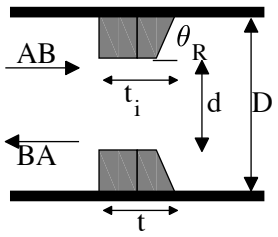
Type : chamfered orifice

Head loss coefficients

k_{AB}	21.23 ±0.31
k_{BA}	14.95 ±0.35
λ	0.70

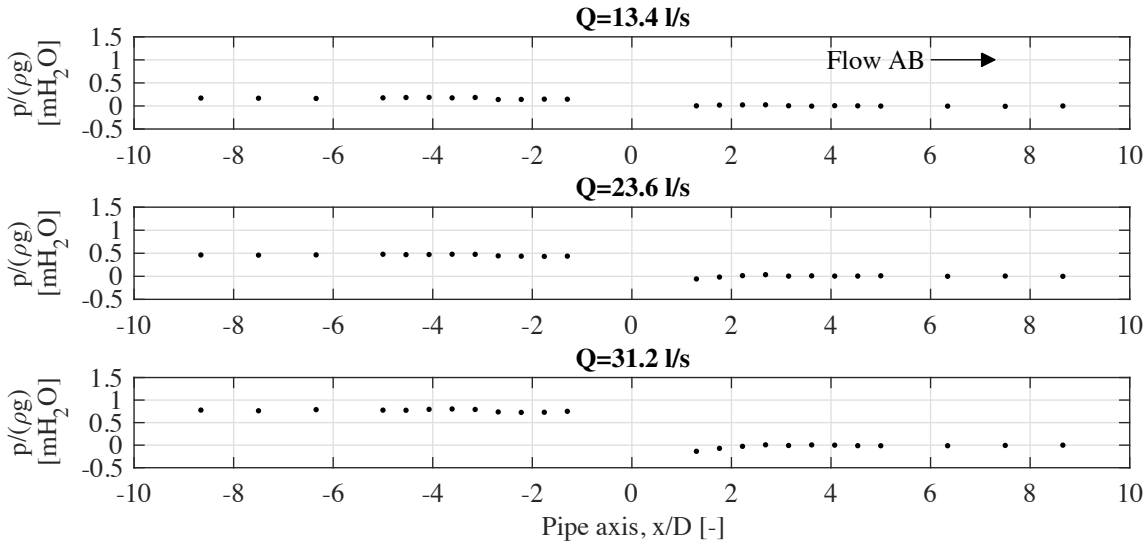
Jet length

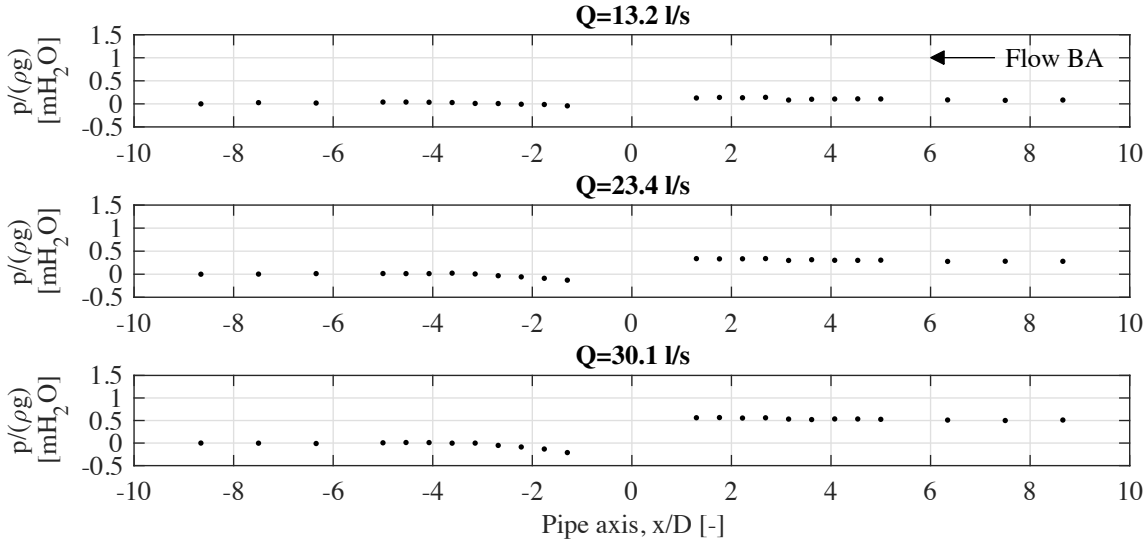
$L_{j,AB}$	3.66
$L_{j,BA}$	4

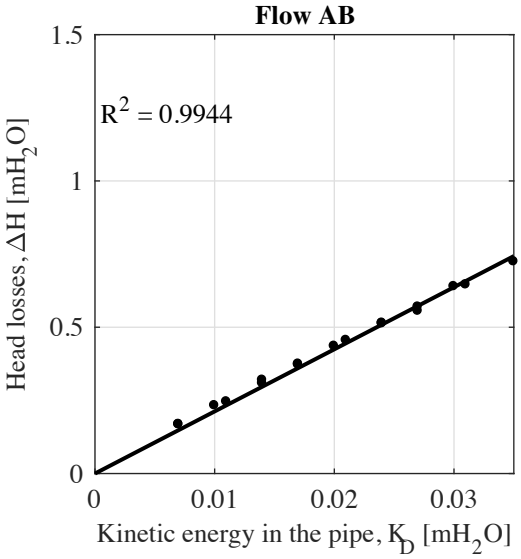


Geometrical parameters

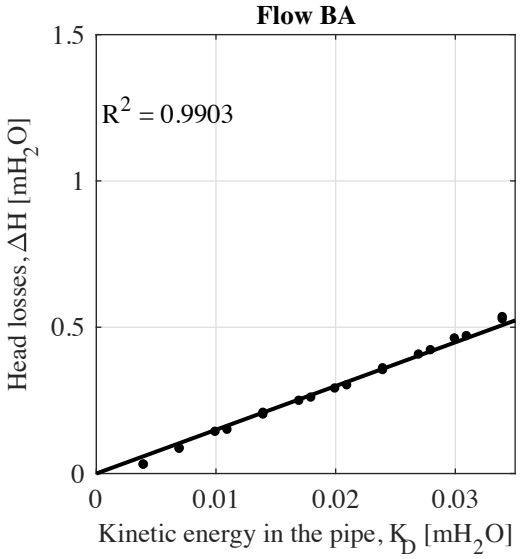
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	64.5	[mm]	α_i	*0.299*	*[-]*
θ_L	0	*[deg]*	θ_R	67	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.167
13.4	0.007	0.168
16.2	0.01	0.232
16.7	0.011	0.245
18.9	0.014	0.308
19.4	0.014	0.319
21.2	0.017	0.371
21.2	0.017	0.374
23.2	0.02	0.435
23.6	0.021	0.455
25	0.024	0.512
25.2	0.024	0.514
26.7	0.027	0.569
26.8	0.027	0.555
28.3	0.03	0.639
28.5	0.031	0.645
30.3	0.035	0.724
31.2	0.037	0.776



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.029
9.7	0.004	0.029
13.2	0.007	0.083
13.6	0.007	0.085
16.5	0.01	0.141
16.9	0.011	0.148
19.1	0.014	0.2
19.5	0.014	0.206
21.2	0.017	0.247
21.5	0.018	0.258
23	0.02	0.289
23.4	0.021	0.3
25.1	0.024	0.352
25.2	0.024	0.358
26.7	0.027	0.405
27	0.028	0.42
28.2	0.03	0.46
28.5	0.031	0.468
29.9	0.034	0.526
30.1	0.034	0.533

Orifice : **EXP_031**

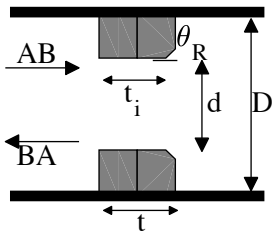
Type : chamfered orifice

Head loss coefficients

k_{AB}	19.32 ±0.32
k_{BA}	10.84 ±0.28
λ	0.56

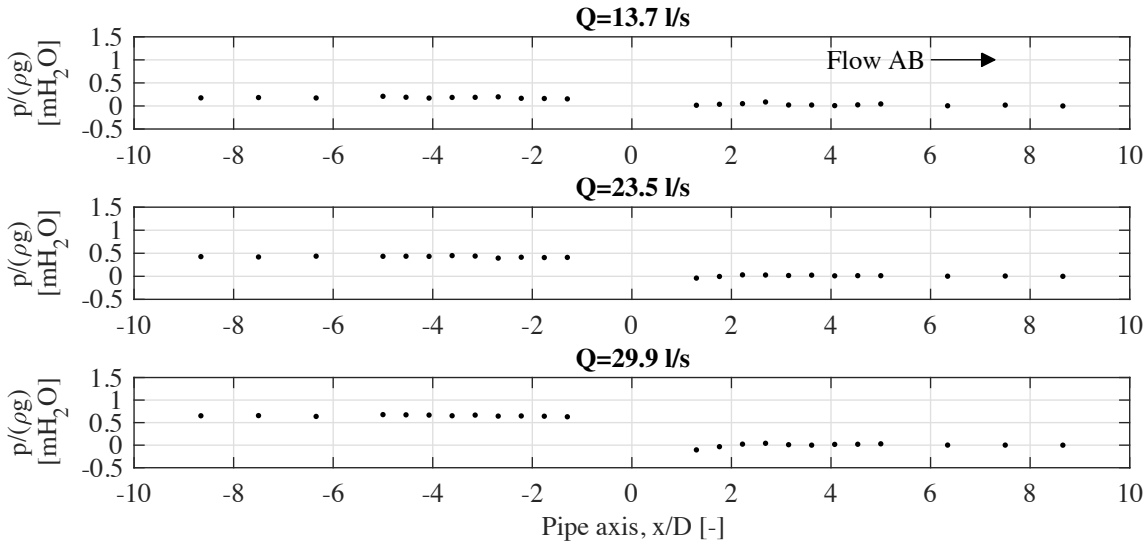
Jet length

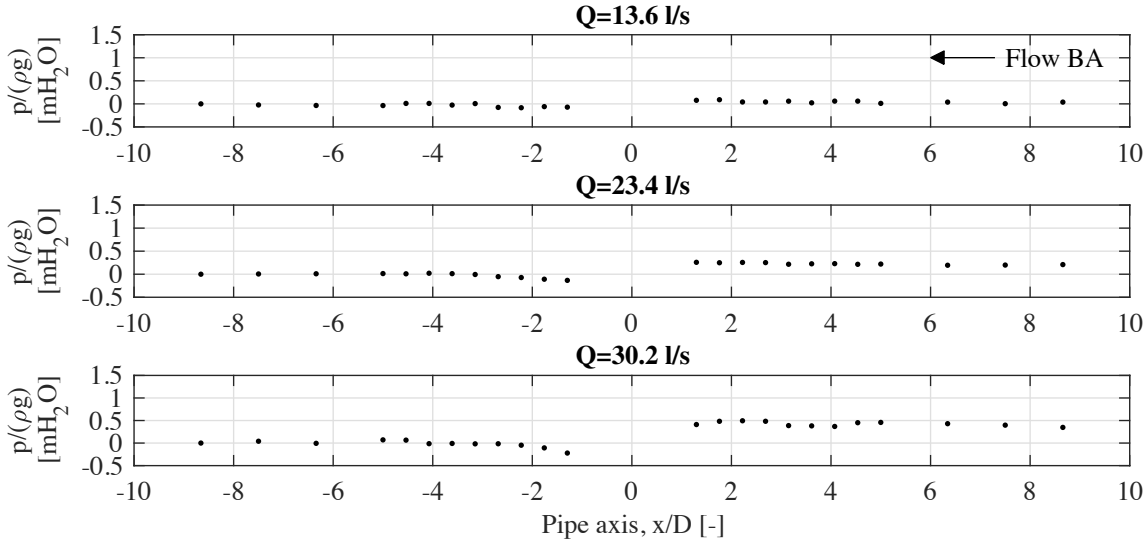
$L_{j,AB}$	3.62
$L_{j,BA}$	3.94

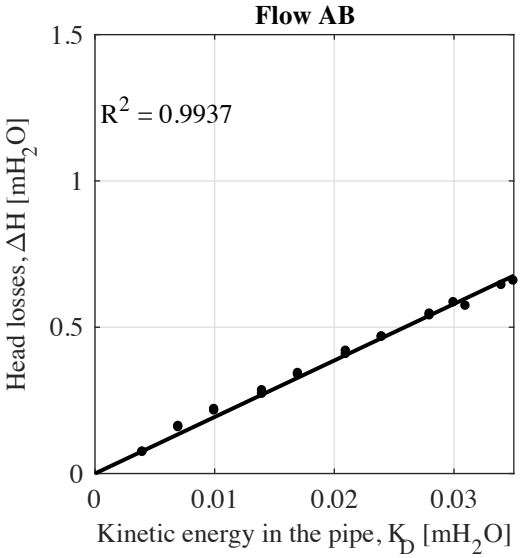


Geometrical parameters

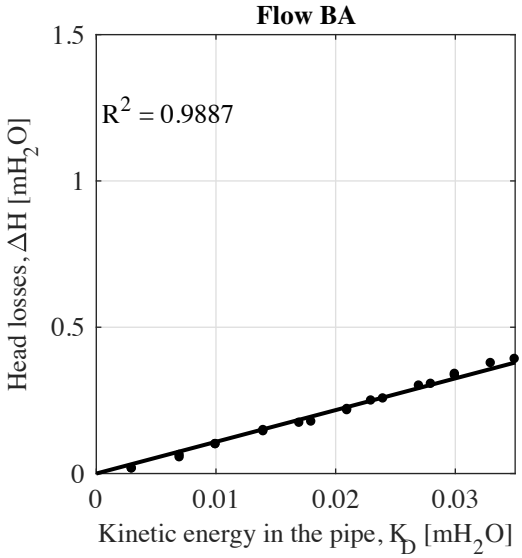
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	75	[mm]	α_i	*0.348*	*[-]*
θ_L	0	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.073
9.7	0.004	0.073
13.5	0.007	0.157
13.7	0.007	0.161
16.3	0.01	0.214
16.4	0.01	0.219
19	0.014	0.283
19.2	0.014	0.271
21.1	0.017	0.342
21.2	0.017	0.337
23.4	0.021	0.407
23.5	0.021	0.418
25.2	0.024	0.466
25.2	0.024	0.467
27.2	0.028	0.539
27.3	0.028	0.545
28.3	0.03	0.584
28.5	0.031	0.572
29.9	0.034	0.643
30.2	0.035	0.658



Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.016
9.6	0.003	0.016
13.2	0.007	0.054
13.6	0.007	0.062
16.4	0.01	0.099
16.5	0.01	0.099
19.2	0.014	0.143
19.3	0.014	0.147
21.2	0.017	0.172
21.5	0.018	0.176
23.3	0.021	0.215
23.4	0.021	0.219
24.7	0.023	0.248
25	0.024	0.255
26.7	0.027	0.299
27	0.028	0.305
28.2	0.03	0.334
28.3	0.03	0.339
29.7	0.033	0.376
30.2	0.035	0.39

Orifice : **EXP_032**

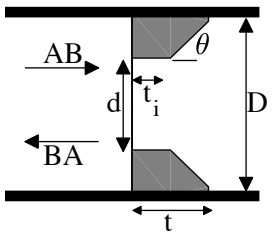
Type : sharp orifice

Head loss coefficients

k_{AB}	26.2 ±0.23
k_{BA}	12.5 ±0.19
λ	0.48

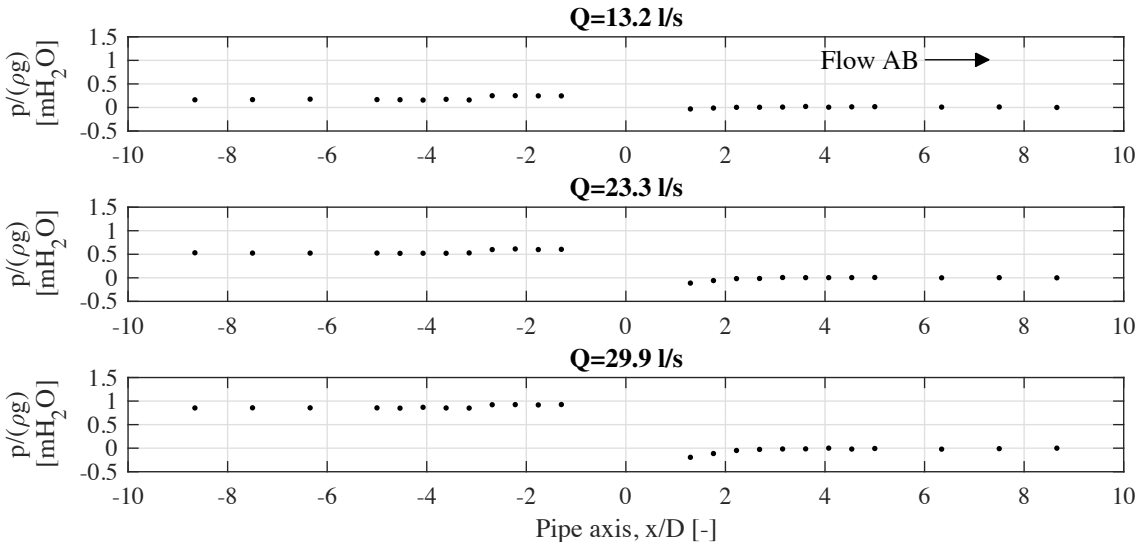
Jet length

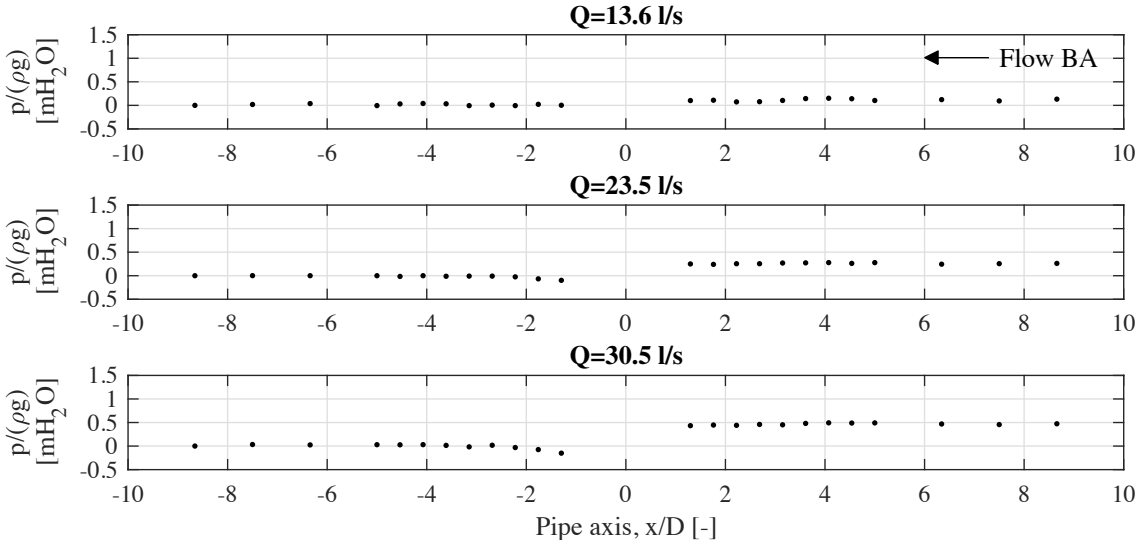
$L_{j,AB}$	3.98
$L_{j,BA}$	3.81

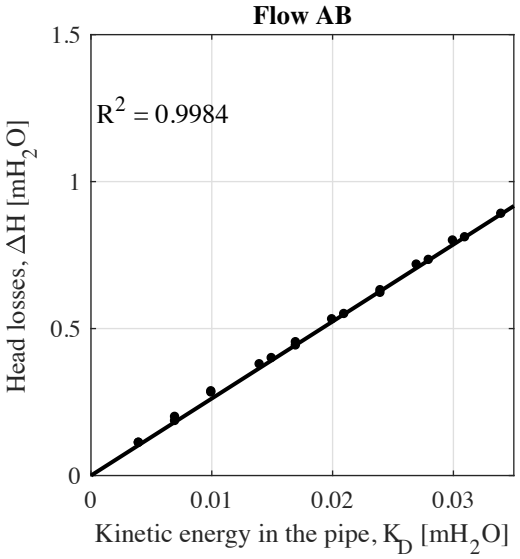


Geometrical parameters

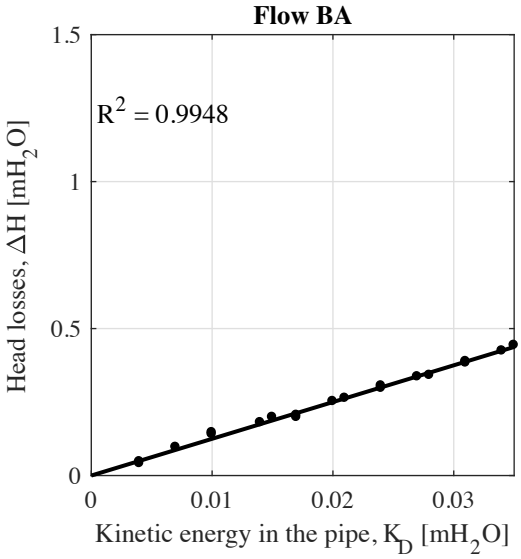
d	107	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.3	0.007	0.232
13.6	0.007	0.242
14.8	0.008	0.171
16.4	0.010	0.341
19.0	0.014	0.448
19.4	0.014	0.456
20.8	0.016	0.531
21.2	0.017	0.542
22.9	0.020	0.627
23.3	0.021	0.651
25.0	0.024	0.741
25.2	0.024	0.752
26.7	0.027	0.835
26.9	0.027	0.859
28.1	0.030	0.934
28.7	0.031	0.965
30.0	0.034	1.052
30.4	0.035	1.083



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.041
9.7	0.004	0.047
13.6	0.007	0.096
16.3	0.010	0.146
16.6	0.010	0.140
19.1	0.014	0.180
19.9	0.015	0.198
21.0	0.017	0.198
21.4	0.017	0.205
23.1	0.020	0.252
23.5	0.021	0.263
25.0	0.024	0.297
25.2	0.024	0.305
26.8	0.027	0.336
27.0	0.028	0.341
28.4	0.031	0.383
28.6	0.031	0.388
29.8	0.034	0.424
30.5	0.035	0.443

Orifice : **EXP_033**

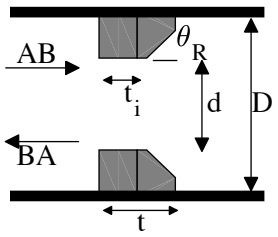
Type : chamfered orifice

Head loss coefficients

k_{AB}	27.8 ±0.42
k_{BA}	11.7 ±0.38
λ	0.42

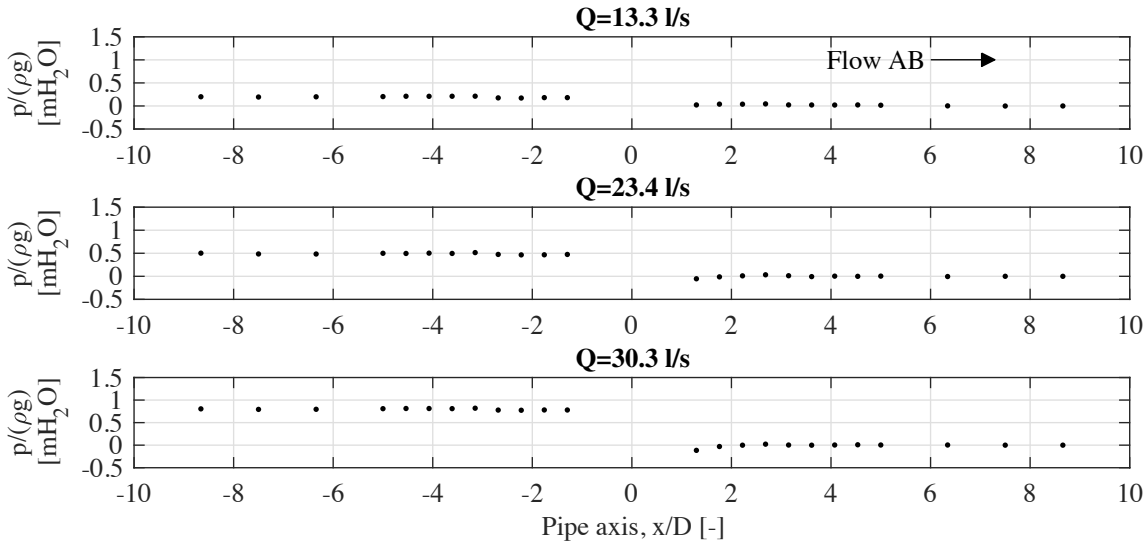
Jet length

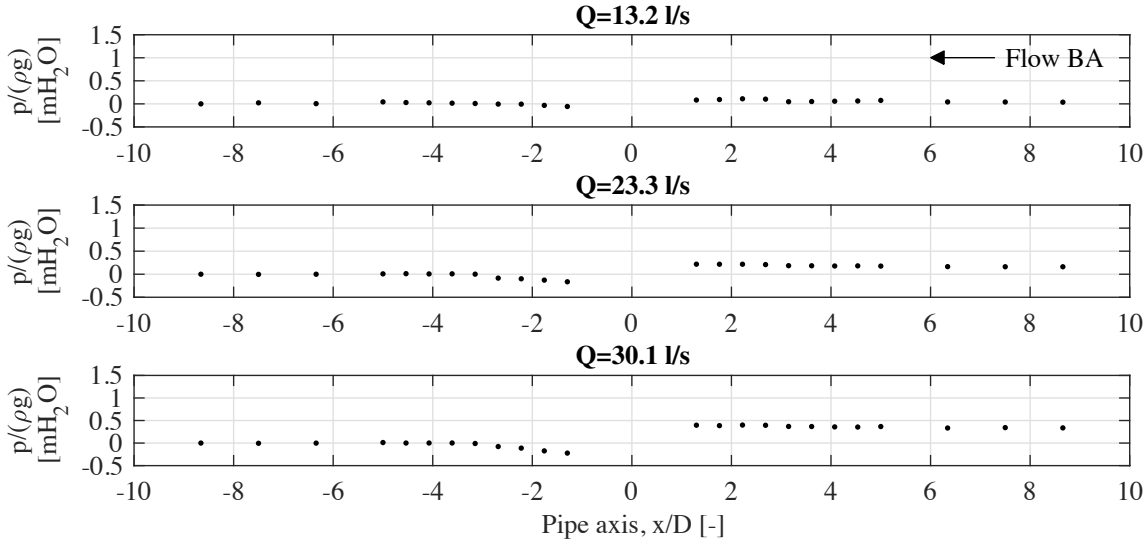
$L_{j,AB}$	3.42
$L_{j,BA}$	3.82

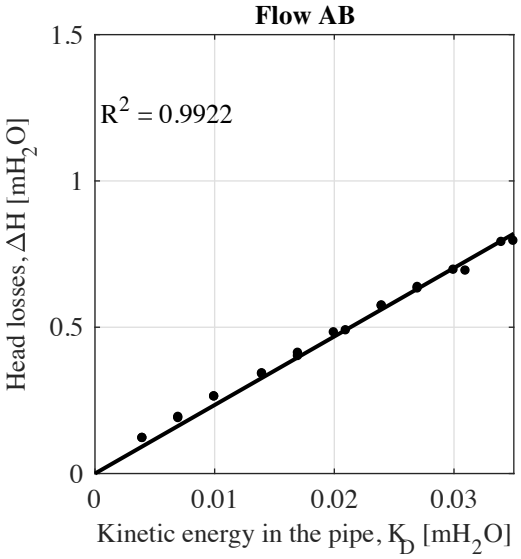


Geometrical parameters

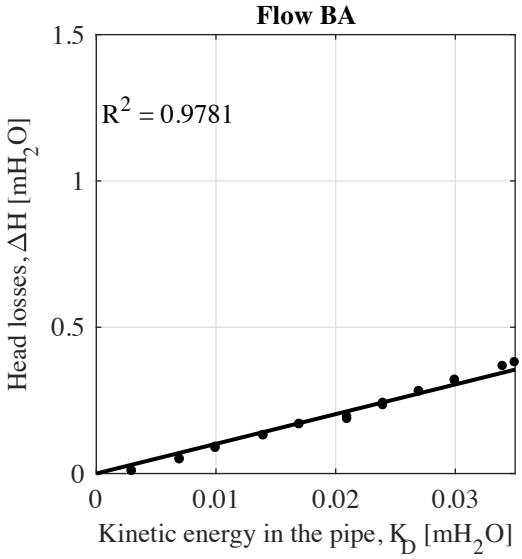
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	54.0	[mm]	α_i	*0.250*	*[-]*
θ_L	0	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.125
9.9	0.004	0.125
13.3	0.007	0.197
13.5	0.007	0.201
16.4	0.01	0.274
16.5	0.01	0.274
19	0.014	0.354
19.1	0.014	0.356
20.9	0.017	0.418
21.3	0.017	0.430
23.2	0.02	0.503
23.4	0.021	0.510
25.3	0.024	0.599
25.3	0.024	0.597
26.7	0.027	0.660
26.9	0.027	0.665
28.2	0.03	0.727
28.5	0.031	0.723
30.1	0.034	0.826
30.3	0.035	0.830



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.008
9.5	0.003	0.008
13.2	0.007	0.047
13.6	0.007	0.049
16.2	0.01	0.086
16.5	0.01	0.09
19.1	0.014	0.129
19.1	0.014	0.13
21.2	0.017	0.167
21.4	0.017	0.168
23.3	0.021	0.185
23.4	0.021	0.193
25.1	0.024	0.232
25.2	0.024	0.24
26.7	0.027	0.279
26.8	0.027	0.28
28.3	0.03	0.319
28.3	0.03	0.316
30.1	0.034	0.366
30.4	0.035	0.379

Orifice : **EXP_034**

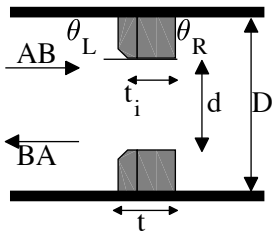
Type : chamfered orifice

Head loss coefficients

k_{AB}	13.61 ±0.39
k_{BA}	20.85 ±0.34
λ	0.65

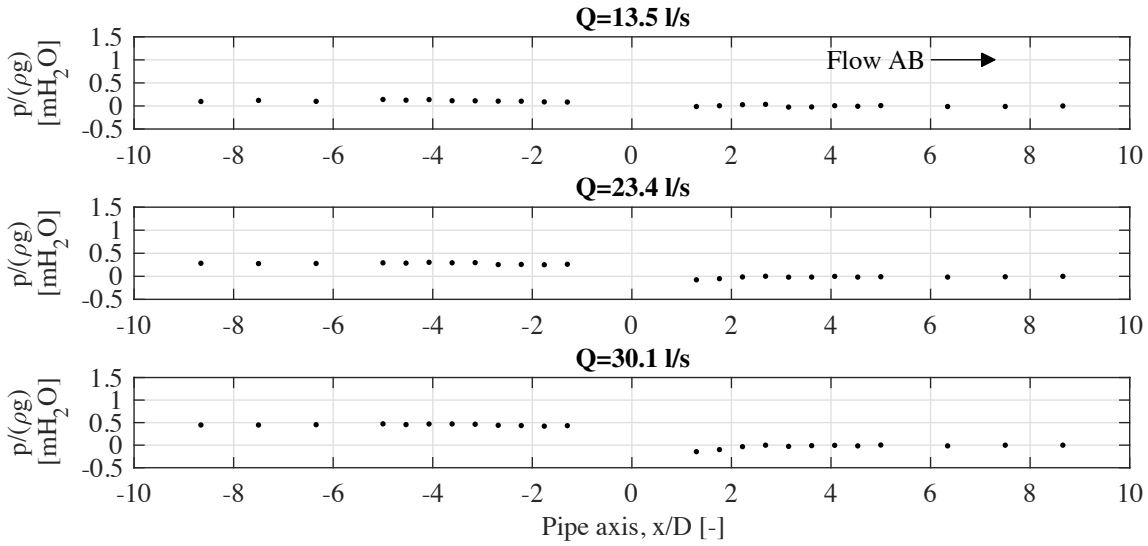
Jet length

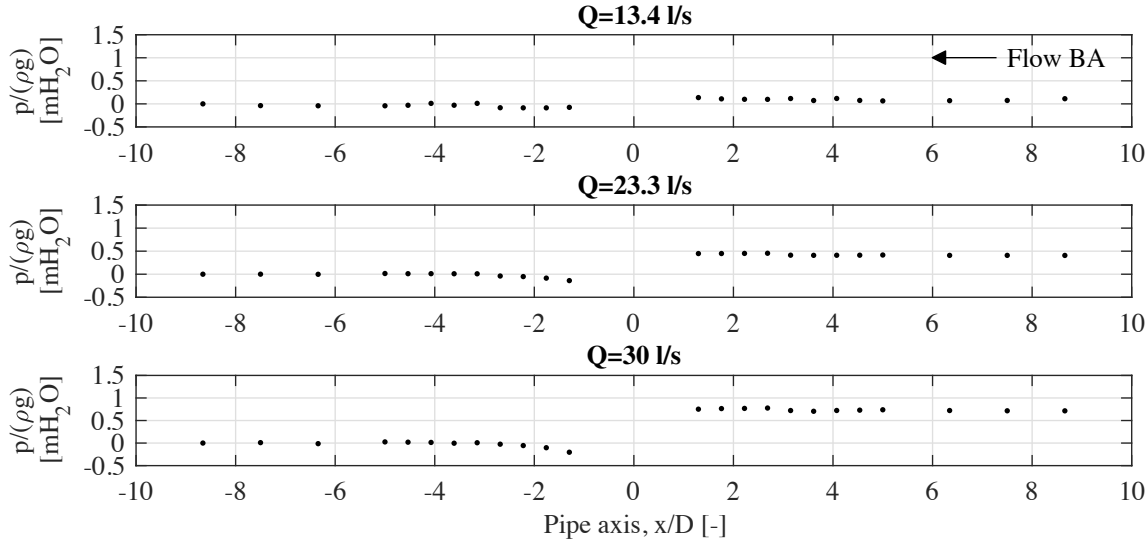
$L_{j,AB}$	3.68
$L_{j,BA}$	3.74

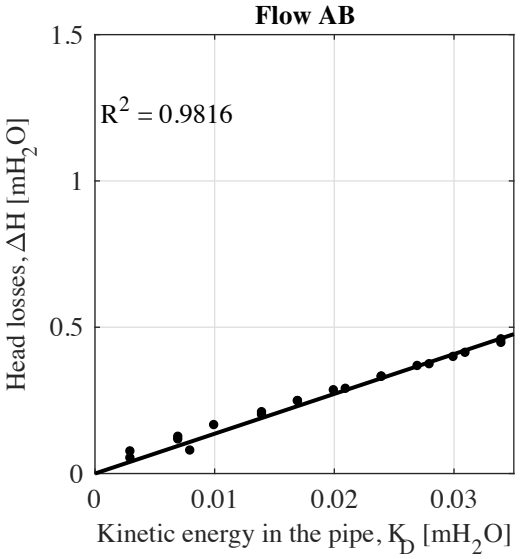


Geometrical parameters

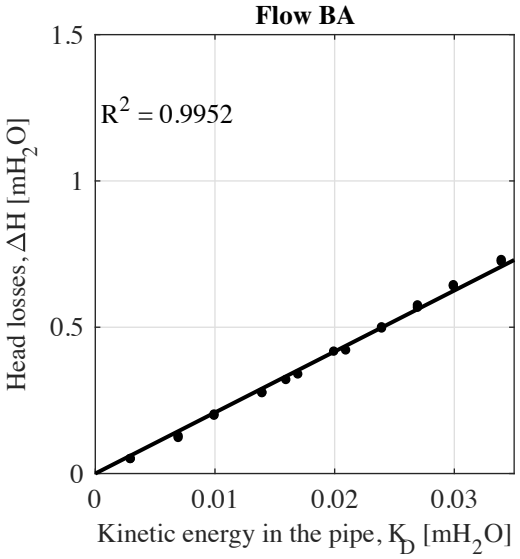
d	107.0	[mm]	β	*0.495*	*[-]*
t	64.5	[mm]	α	*0.299*	*[-]*
t_i	54.0	[mm]	α_i	*0.250*	*[-]*
θ_L	0	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.074
9.5	0.003	0.051
13.5	0.007	0.115
13.6	0.007	0.124
14.3	0.008	0.077
16.4	0.01	0.164
18.9	0.014	0.199
19.3	0.014	0.208
21.2	0.017	0.246
21.4	0.017	0.246
23.1	0.02	0.283
23.4	0.021	0.288
25.2	0.024	0.329
25.2	0.024	0.33
26.8	0.027	0.366
27.4	0.028	0.372
28.1	0.03	0.397
28.5	0.031	0.411
30	0.034	0.445
30.1	0.034	0.457



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.048
9.4	0.003	0.048
13.2	0.007	0.12
13.4	0.007	0.126
16.3	0.01	0.196
16.4	0.01	0.2
19	0.014	0.273
19	0.014	0.275
20.8	0.016	0.318
21.2	0.017	0.337
23.2	0.02	0.415
23.3	0.021	0.419
25.1	0.024	0.494
25.1	0.024	0.498
26.8	0.027	0.573
26.8	0.027	0.565
28.2	0.03	0.638
28.3	0.03	0.642
30	0.034	0.728
30	0.034	0.722

Orifice : **EXP_035**

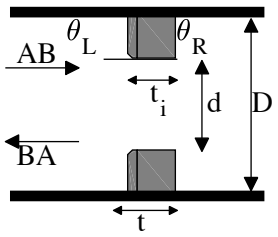
Type : chamfered orifice

Head loss coefficients

k_{AB}	14.57 ±0.42
k_{BA}	22.85 ±0.26
λ	0.64

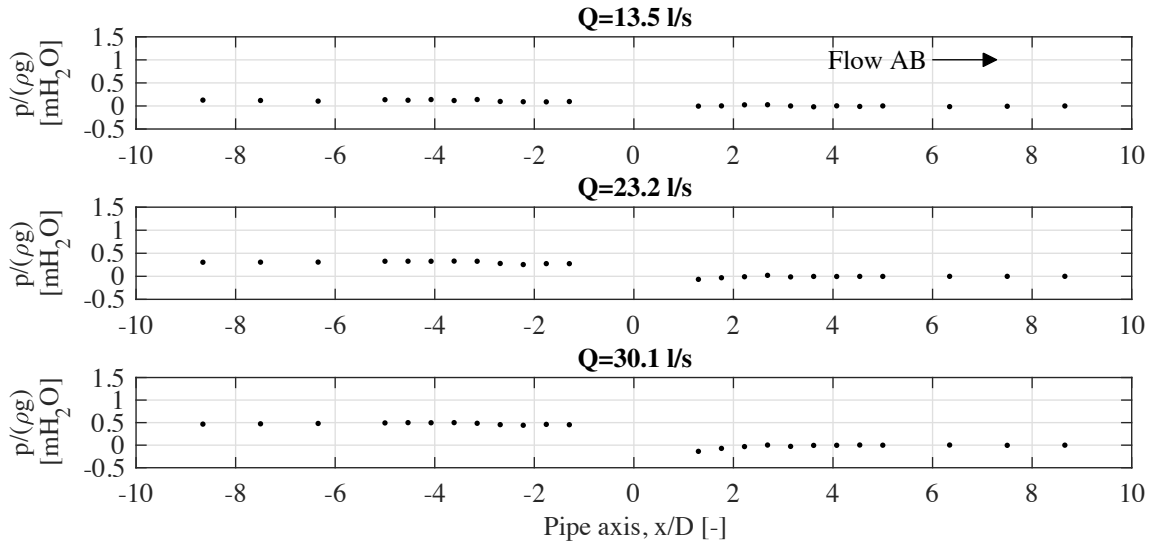
Jet length

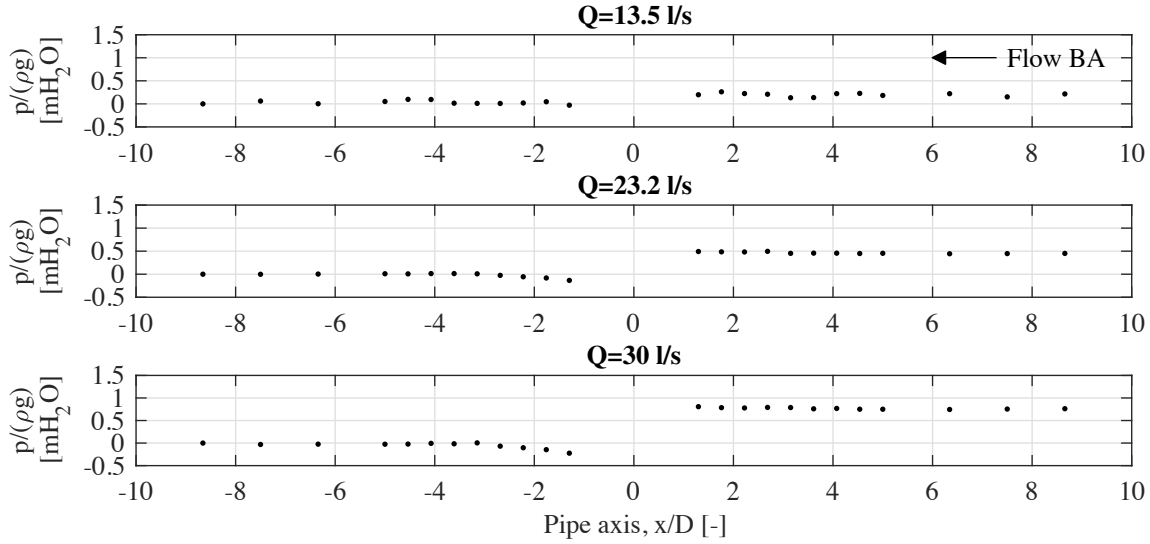
$L_{j,AB}$	3.59
$L_{j,BA}$	3.75

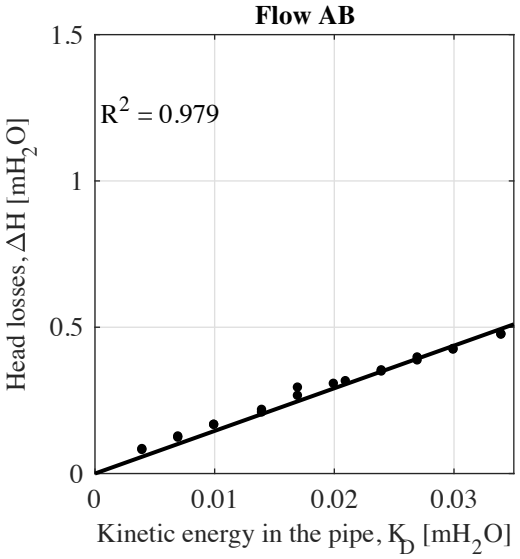


Geometrical parameters

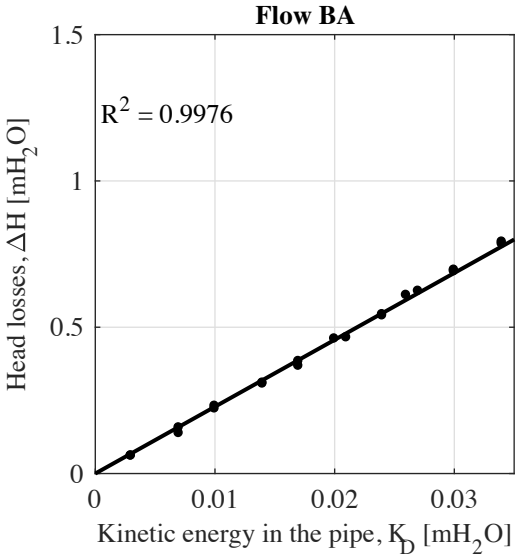
d	107.0	[mm]	β	*0.495*	*[-]*
t	54.0	[mm]	α	*0.250*	*[-]*
t_i	48.5	[mm]	α_i	*0.224*	*[-]*
θ_L	0	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.082
9.7	0.004	0.079
13.5	0.007	0.121
13.6	0.007	0.125
16.4	0.01	0.165
16.5	0.01	0.165
19	0.014	0.216
19.1	0.014	0.207
21.3	0.017	0.292
21.3	0.017	0.264
23.2	0.02	0.305
23.5	0.021	0.314
25.2	0.024	0.347
25.3	0.024	0.351
26.7	0.027	0.395
26.8	0.027	0.385
28.2	0.03	0.424
28.3	0.03	0.422
30	0.034	0.473
30.1	0.034	0.475



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.06
9.4	0.003	0.06
13.2	0.007	0.137
13.5	0.007	0.156
16.3	0.01	0.221
16.5	0.01	0.23
19	0.014	0.306
19.2	0.014	0.309
20.9	0.017	0.367
21.3	0.017	0.383
23.2	0.02	0.46
23.3	0.021	0.464
25	0.024	0.539
25.1	0.024	0.543
26.4	0.026	0.609
26.7	0.027	0.623
28.2	0.03	0.695
28.2	0.03	0.69
29.8	0.034	0.784
30	0.034	0.791

Orifice : **EXP036**

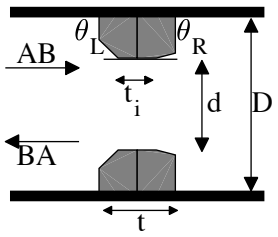
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	10.39 ±0.92
k_{BA}	10.72 ±0.25
λ	0.97

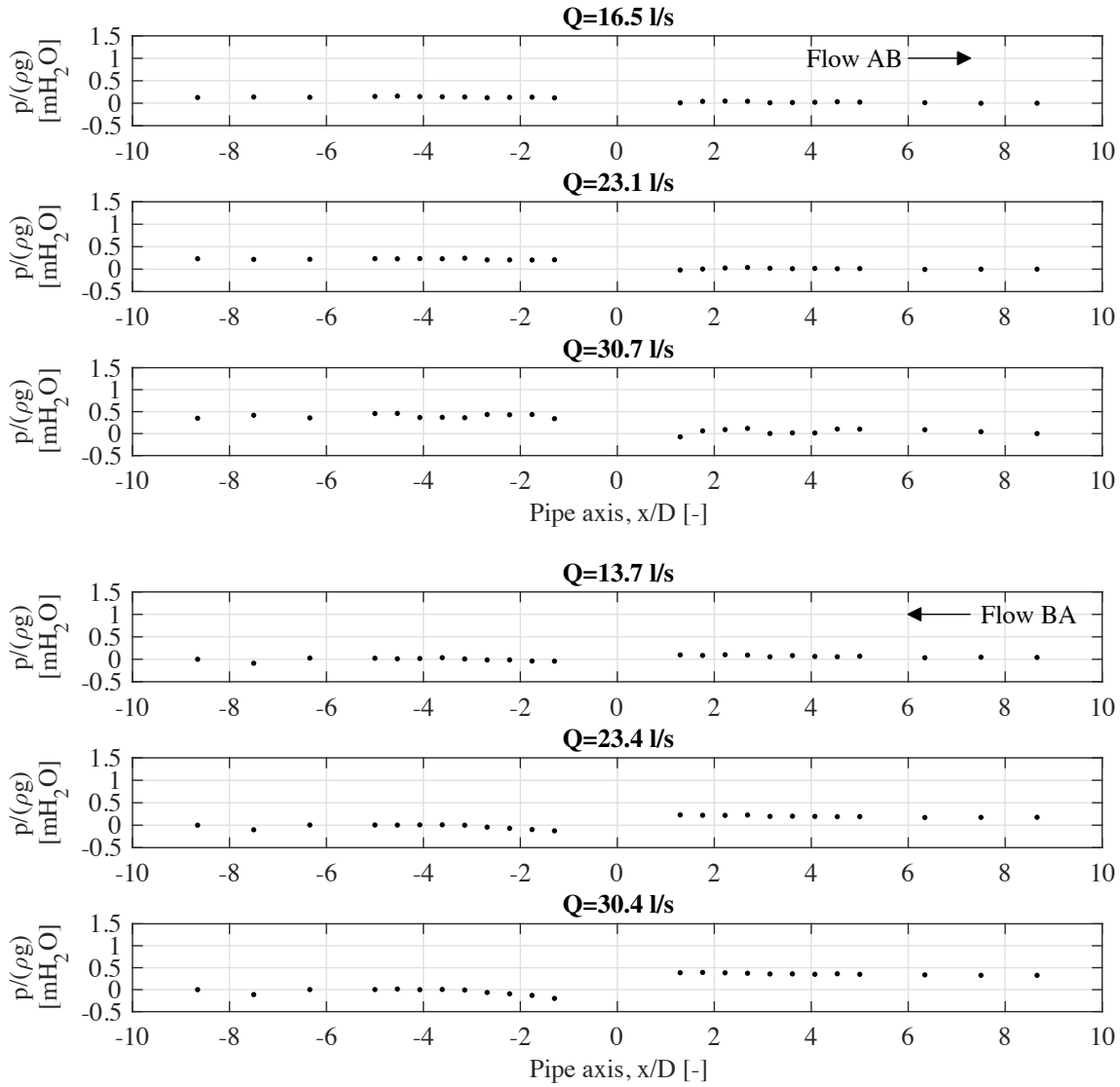
Jet length

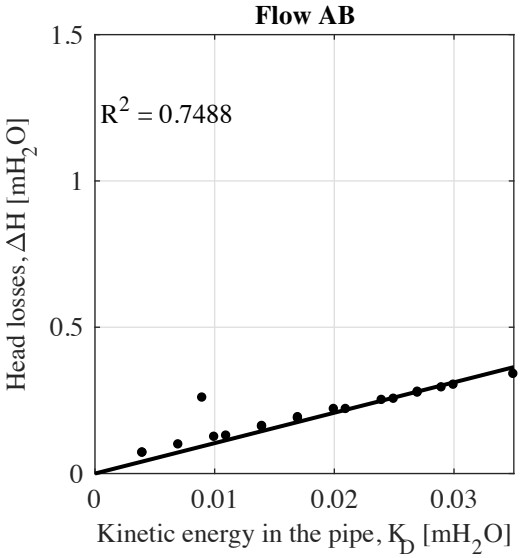
$L_{j,AB}$	3.92
$L_{j,BA}$	4.23



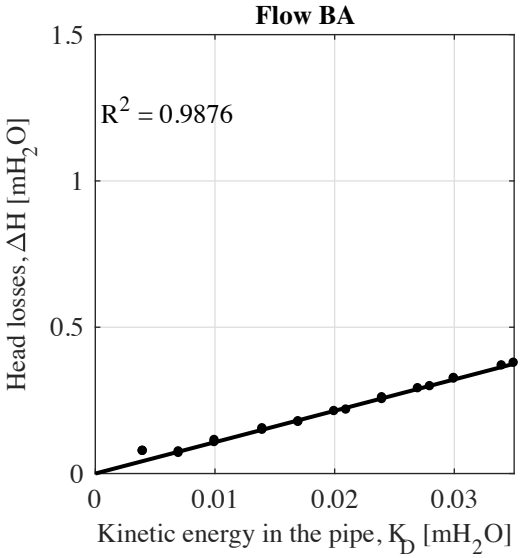
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	45	*[deg]*	θ_R	15	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.07
9.7	0.004	0.07
13.5	0.007	0.098
15.5	0.009	0.258
16.5	0.01	0.124
16.7	0.011	0.128
19.2	0.014	0.161
19.2	0.014	0.159
21.2	0.017	0.187
21.3	0.017	0.191
23.1	0.02	0.219
23.4	0.021	0.219
25.2	0.024	0.25
25.5	0.025	0.254
26.8	0.027	0.275
26.8	0.027	0.278
27.7	0.029	0.293
28.3	0.03	0.302
30.2	0.035	0.339
30.7	0.036	0.331



Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.076
9.8	0.004	0.076
13.2	0.007	0.069
13.7	0.007	0.074
16.2	0.01	0.106
16.6	0.01	0.113
19	0.014	0.148
19.4	0.014	0.153
21.1	0.017	0.175
21.3	0.017	0.177
23.1	0.02	0.212
23.4	0.021	0.217
25.1	0.024	0.253
25.3	0.024	0.259
26.7	0.027	0.29
27.1	0.028	0.297
28.2	0.03	0.325
28.3	0.03	0.323
30	0.034	0.368
30.4	0.035	0.377

Orifice : **EXP037**

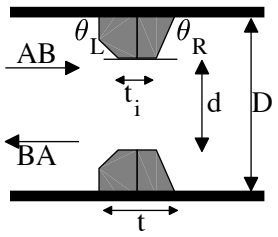
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	13.70 ±0.89
k_{BA}	20.41 ±0.25
λ	0.53

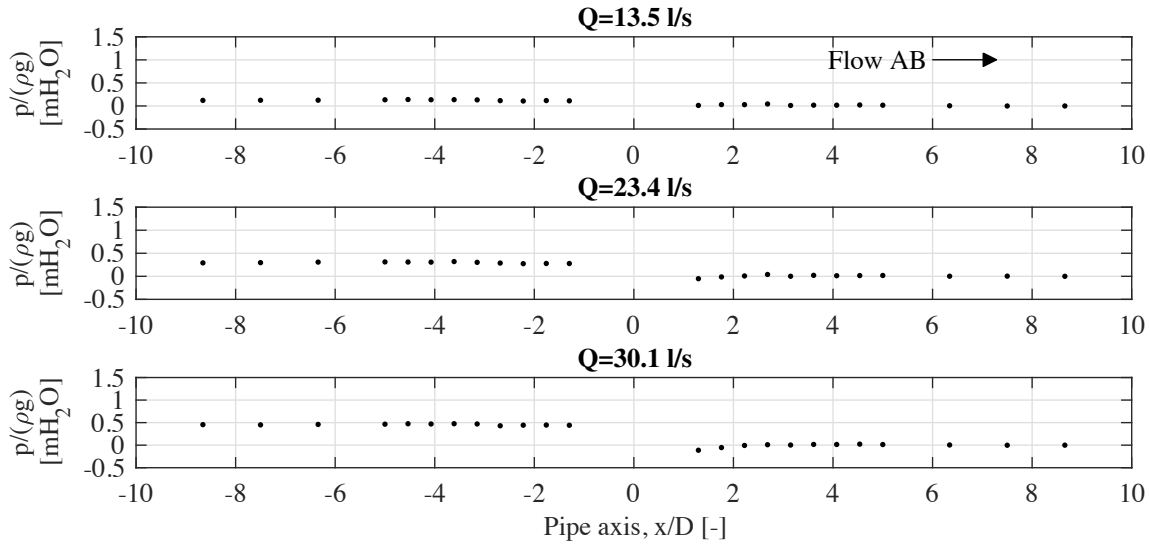
Jet length

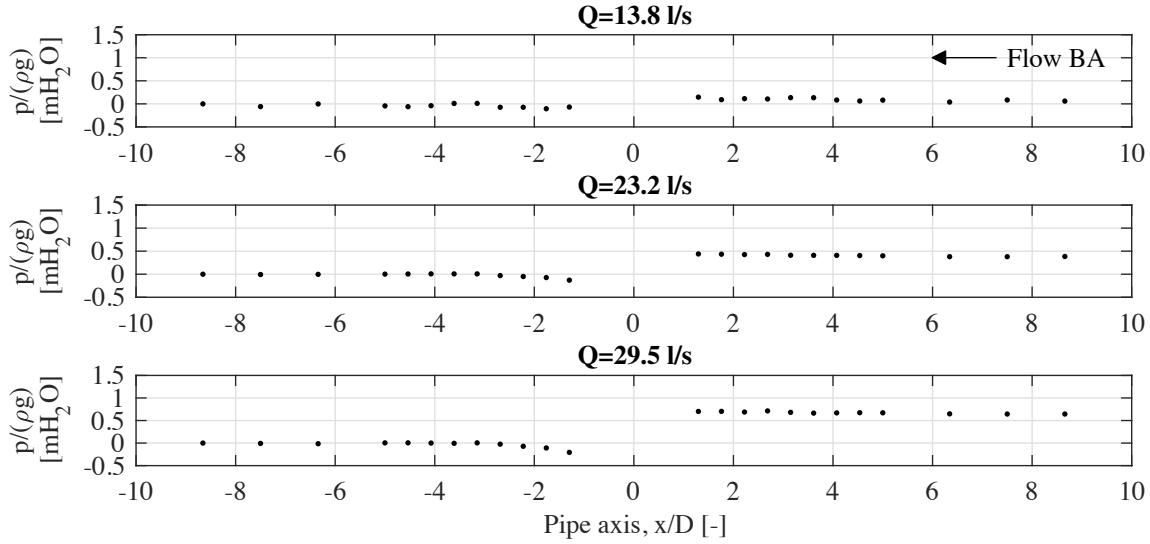
$L_{j,AB}$	4.04
$L_{j,BA}$	3.74

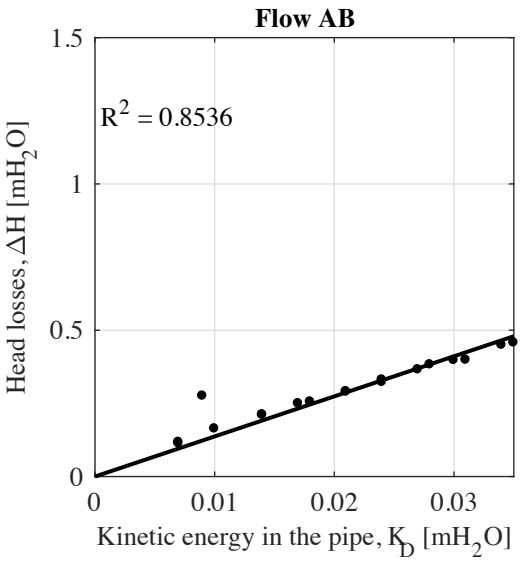


Geometrical parameters

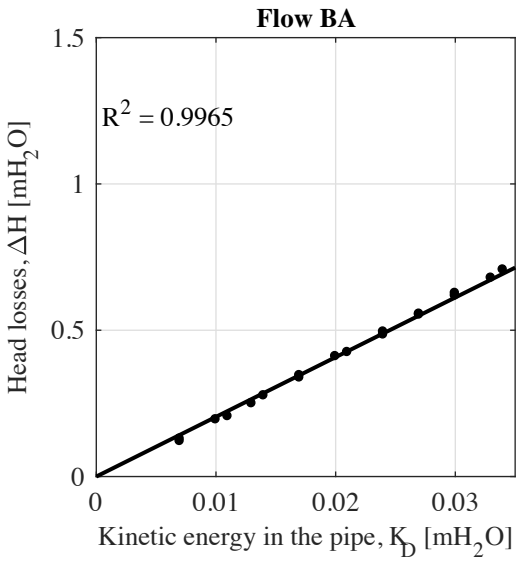
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	45	*[deg]*	θ_R	67	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.4	0.007	0.113
13.5	0.007	0.117
15.4	0.009	0.275
16.6	0.01	0.163
19.4	0.014	0.21
19.5	0.014	0.211
21.2	0.017	0.249
21.5	0.018	0.255
23.4	0.021	0.289
23.4	0.021	0.29
25.1	0.024	0.322
25.2	0.024	0.33
26.8	0.027	0.365
27	0.028	0.382
28.1	0.03	0.397
28.4	0.031	0.398
30.1	0.034	0.449
30.3	0.035	0.457



Q [l/s]	K_D [m]	ΔH [m]
13.1	0.007	0.12
13.8	0.007	0.128
16.3	0.01	0.194
16.7	0.011	0.205
18.7	0.013	0.249
19.3	0.014	0.276
21.2	0.017	0.337
21.4	0.017	0.345
23.2	0.02	0.41
23.5	0.021	0.424
25.1	0.024	0.484
25.3	0.024	0.494
26.7	0.027	0.555
26.8	0.027	0.552
28.2	0.03	0.617
28.3	0.03	0.626
29.5	0.033	0.678
30	0.034	0.706

Orifice : **EXP038**

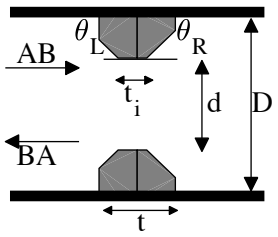
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	14.88 ±0.37
k_{BA}	13.07 ±0.30
λ	0.88

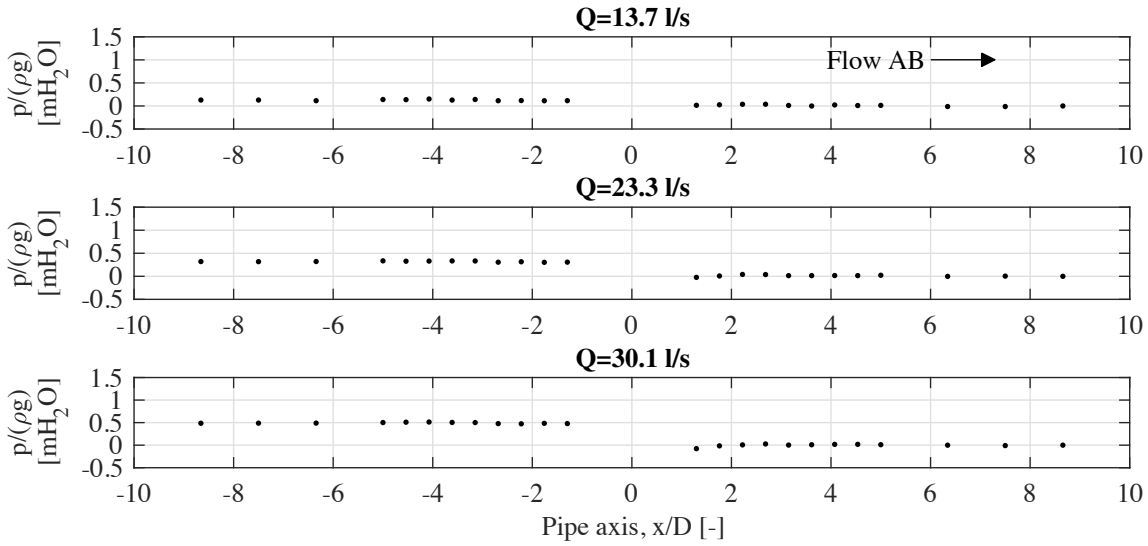
Jet length

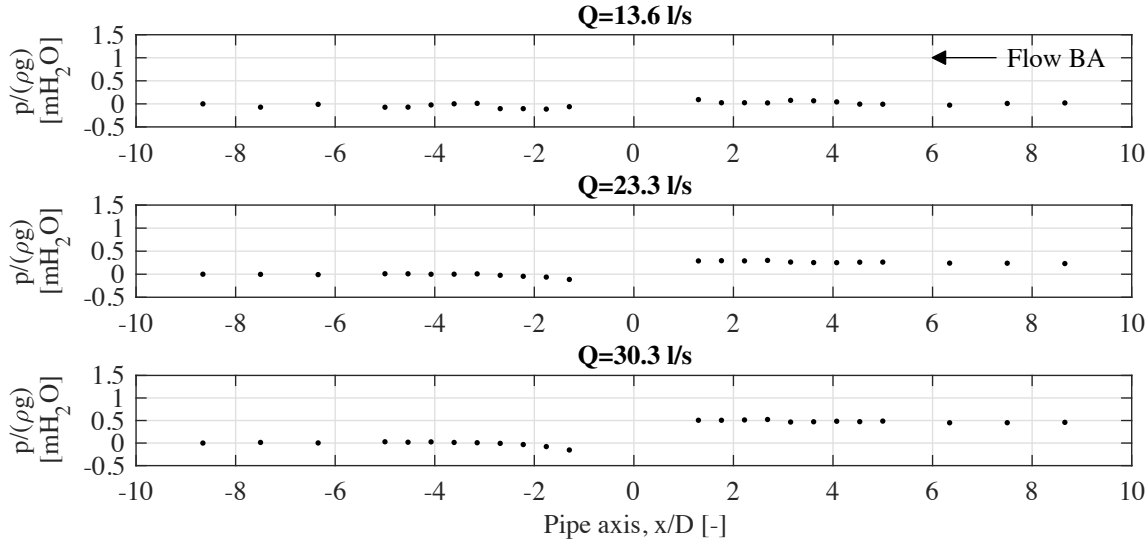
$L_{j,AB}$	3.47
$L_{j,BA}$	4.04

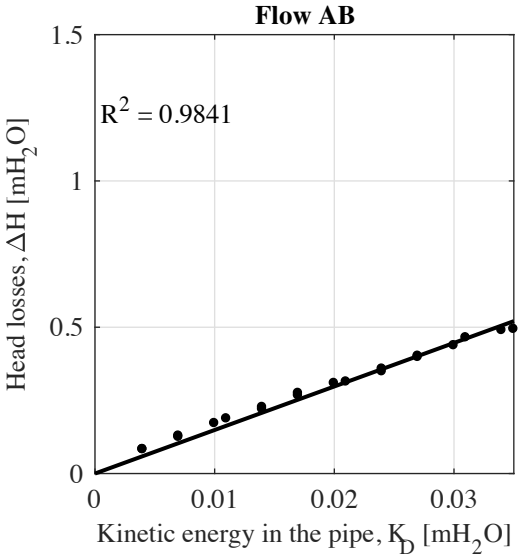


Geometrical parameters

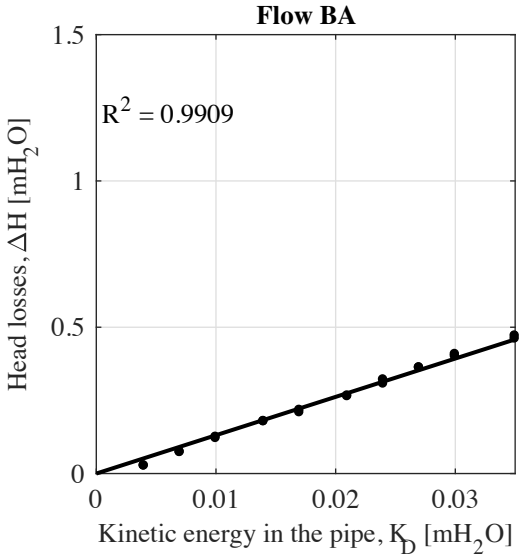
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	32.5	[mm]	α_i	*0.150*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.082
9.8	0.004	0.082
13.3	0.007	0.124
13.7	0.007	0.128
16.4	0.01	0.171
16.7	0.011	0.187
19	0.014	0.219
19.2	0.014	0.226
21.2	0.017	0.266
21.4	0.017	0.274
23.1	0.02	0.308
23.3	0.021	0.313
25	0.024	0.348
25.2	0.024	0.357
26.8	0.027	0.397
26.9	0.027	0.401
28.2	0.03	0.437
28.4	0.031	0.464
30.1	0.034	0.489
30.2	0.035	0.493



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.026
9.7	0.004	0.026
13.2	0.007	0.072
13.6	0.007	0.073
16.4	0.01	0.120
16.5	0.01	0.124
19.2	0.014	0.178
19.2	0.014	0.177
21.2	0.017	0.208
21.4	0.017	0.216
23.3	0.021	0.263
23.4	0.021	0.265
25.1	0.024	0.306
25.4	0.024	0.32
26.9	0.027	0.361
26.9	0.027	0.361
28.3	0.03	0.400
28.3	0.03	0.407
30.2	0.035	0.460
30.3	0.035	0.470

Orifice : **EXP039**

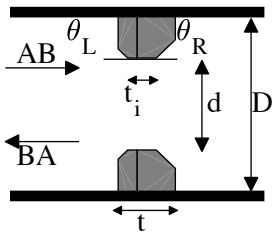
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	16.15 ±0.47
k_{BA}	13.38 ±0.41
λ	0.83

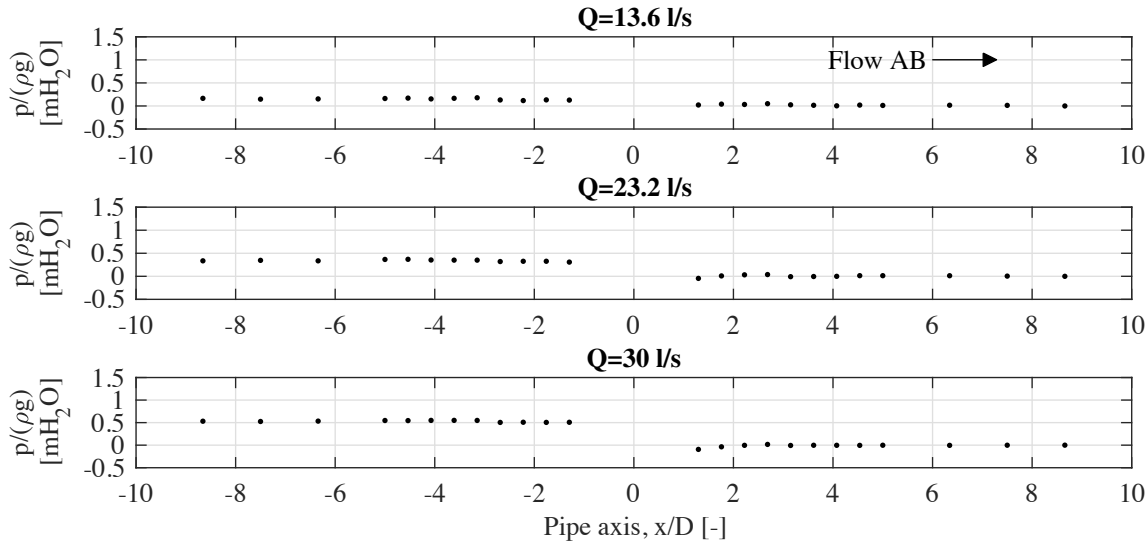
Jet length

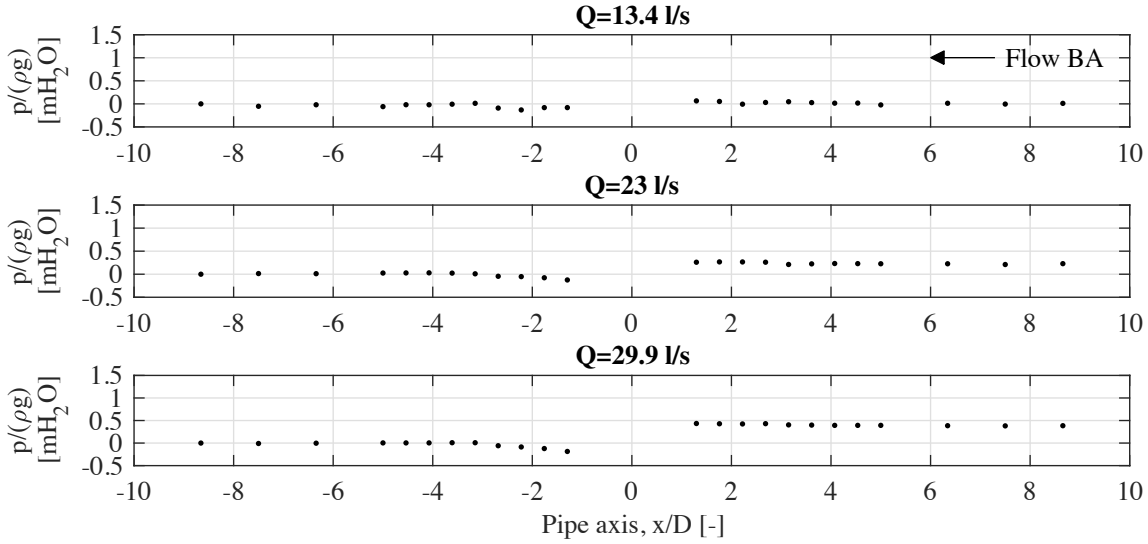
$L_{j,AB}$	4.00
$L_{j,BA}$	3.97

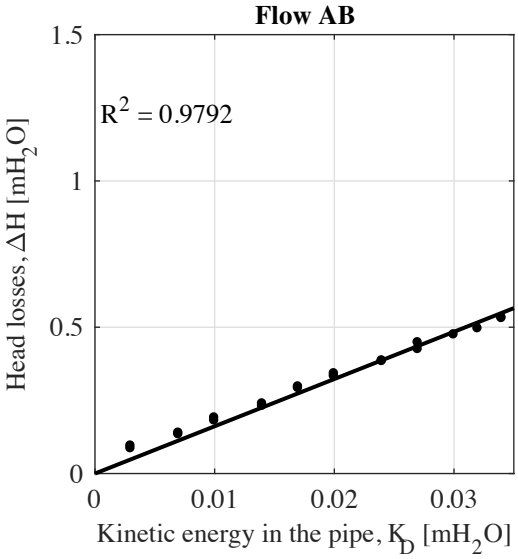


Geometrical parameters

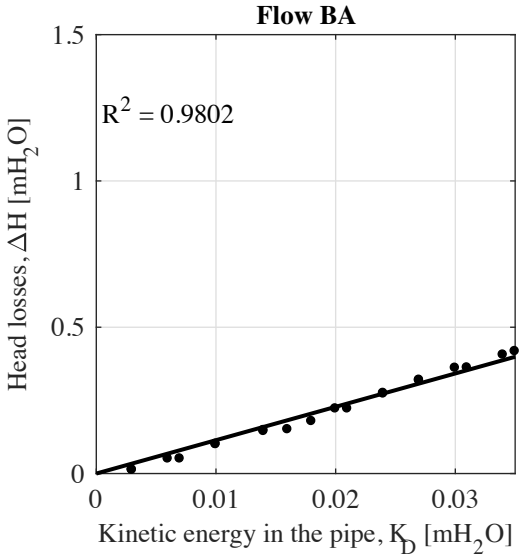
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	32.5	[mm]	α_i	*0.150*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
8.9	0.003	0.094
8.9	0.003	0.085
13.3	0.007	0.133
13.6	0.007	0.138
16.3	0.01	0.18
16.4	0.01	0.19
19.1	0.014	0.23
19.1	0.014	0.238
21.3	0.017	0.291
21.4	0.017	0.296
23.2	0.02	0.332
23.2	0.02	0.341
25.1	0.024	0.385
25.1	0.024	0.383
26.8	0.027	0.424
26.8	0.027	0.447
28.3	0.03	0.474
29	0.032	0.495
30	0.034	0.532
30	0.034	0.53



Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.012
9.6	0.003	0.012
13	0.006	0.05
13.4	0.007	0.05
16.3	0.01	0.099
16.5	0.01	0.1
19	0.014	0.144
19	0.014	0.147
20.4	0.016	0.15
21.5	0.018	0.178
23	0.02	0.221
23.3	0.021	0.221
25.1	0.024	0.272
25.2	0.024	0.274
26.8	0.027	0.317
26.9	0.027	0.319
28.3	0.03	0.36
28.4	0.031	0.361
29.9	0.034	0.405
30.4	0.035	0.417

Orifice : **EXP040**

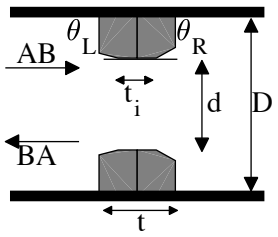
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	9.60 ±0.14
k_{BA}	10.60 ±0.15
λ	0.90

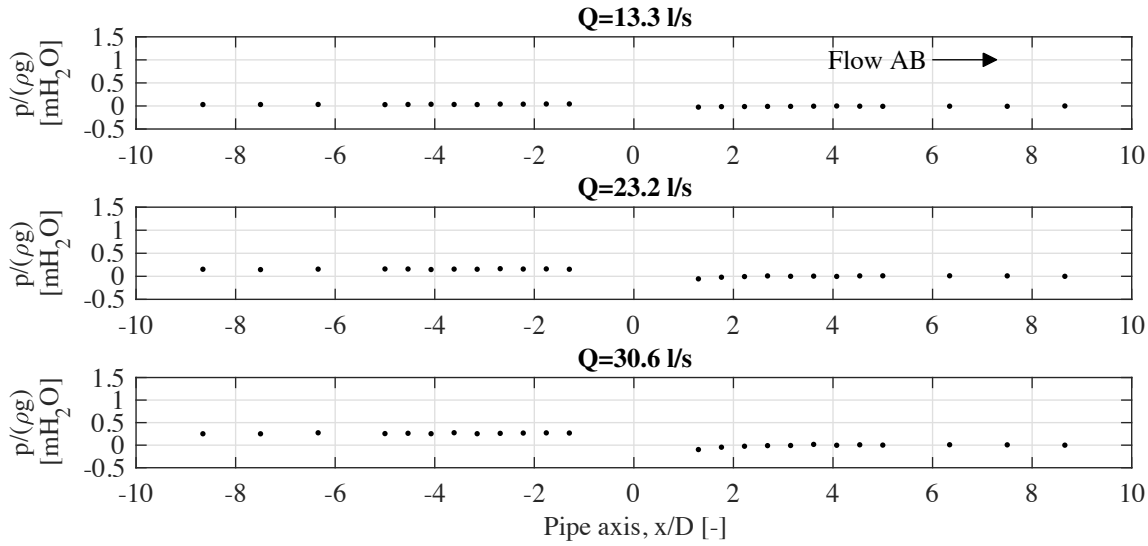
Jet length

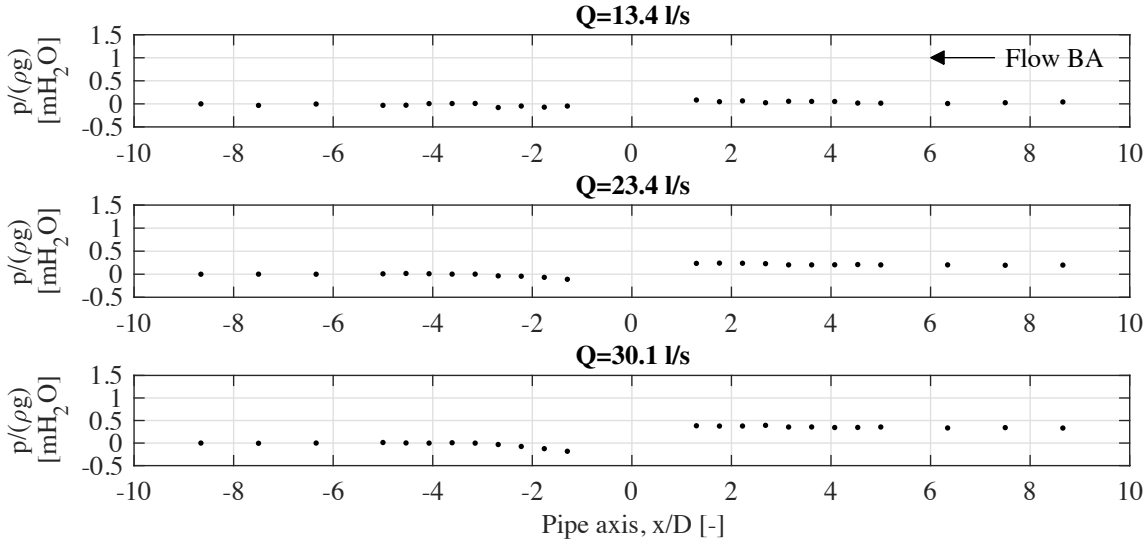
$L_{j,AB}$	4.00
$L_{j,BA}$	3.97

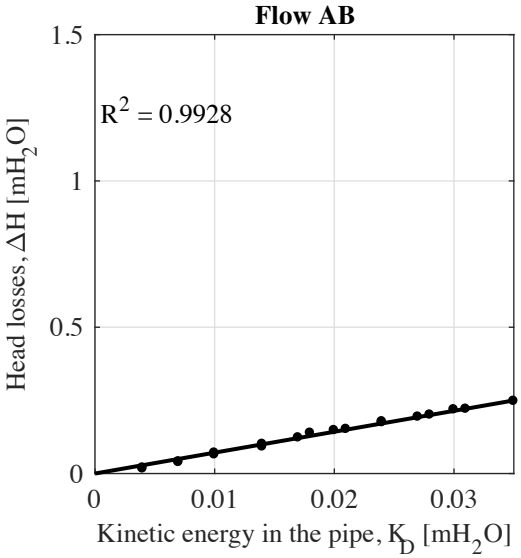


Geometrical parameters

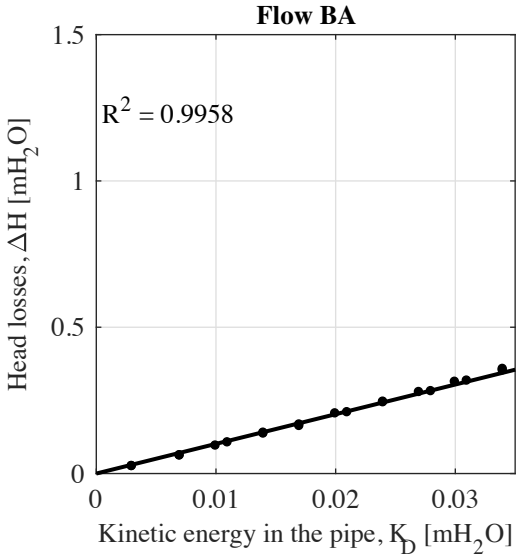
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	15	*[deg]*	θ_R	30	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.026
9.8	0.004	0.022
13.3	0.007	0.054
13.6	0.007	0.051
16.4	0.01	0.086
16.5	0.01	0.094
19	0.014	0.134
19	0.014	0.122
21.1	0.017	0.164
21.9	0.018	0.186
23.2	0.02	0.198
23.3	0.021	0.203
25.1	0.024	0.238
25.2	0.024	0.234
26.8	0.027	0.259
27	0.028	0.269
28.2	0.03	0.293
28.4	0.031	0.296
30.2	0.035	0.332
30.6	0.036	0.347



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.025
9.5	0.003	0.025
13.3	0.007	0.064
13.4	0.007	0.063
16.2	0.01	0.098
16.7	0.011	0.110
18.9	0.014	0.141
19.4	0.014	0.144
21.1	0.017	0.168
21.3	0.017	0.174
23.2	0.02	0.213
23.4	0.021	0.217
25.1	0.024	0.255
25.2	0.024	0.253
26.8	0.027	0.290
27	0.028	0.293
28.3	0.03	0.326
28.4	0.031	0.330
29.9	0.034	0.367
30.1	0.034	0.372

Orifice : **EXP041**

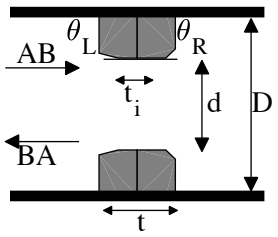
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	10.64 ±0.14
k_{BA}	7.63 ±0.35
λ	0.72

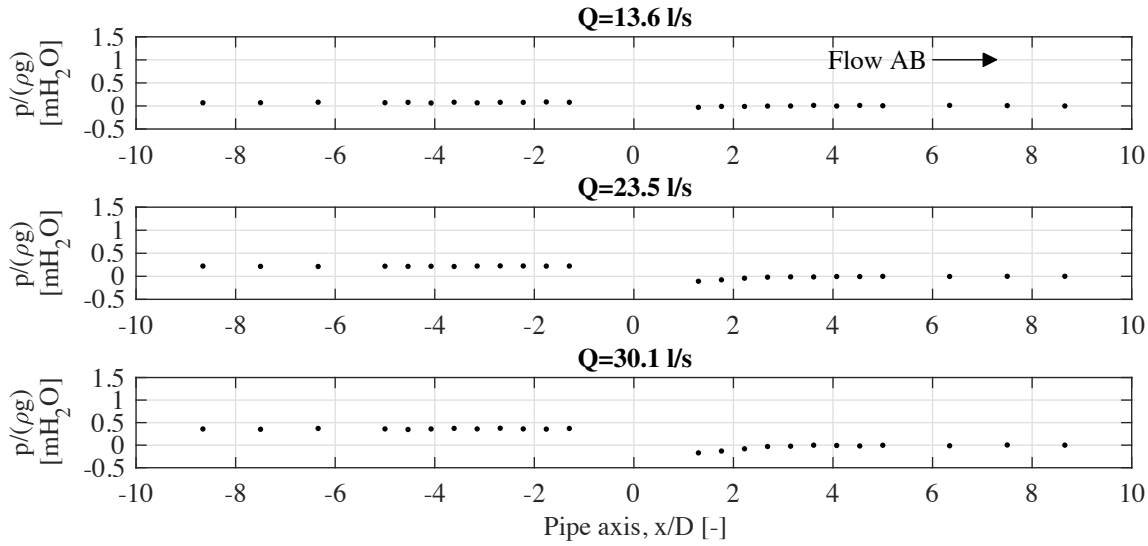
Jet length

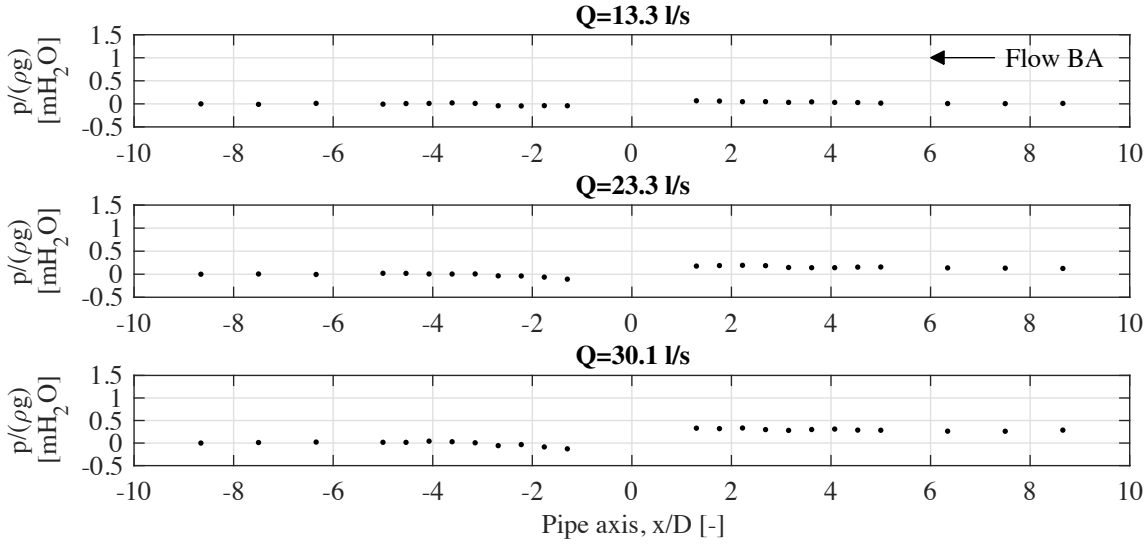
$L_{j,AB}$	4.22
$L_{j,BA}$	4.32

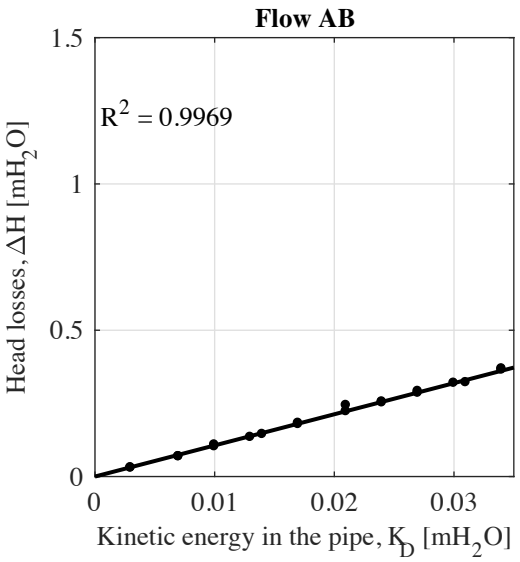


Geometrical parameters

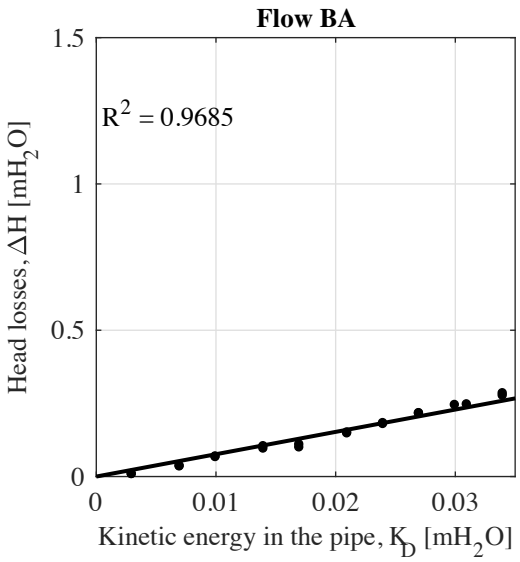
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	53.5	[mm]	α_i	*0.248*	*[-]*
θ_L	15	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.029
9.6	0.003	0.03
13.5	0.007	0.068
13.6	0.007	0.068
16.4	0.01	0.108
16.4	0.01	0.102
18.8	0.013	0.134
19.2	0.014	0.144
21.1	0.017	0.178
21.2	0.017	0.182
23.3	0.021	0.243
23.5	0.021	0.222
25.1	0.024	0.252
25.1	0.024	0.255
26.7	0.027	0.285
26.9	0.027	0.291
28.2	0.03	0.319
28.4	0.031	0.321
30	0.034	0.364
30.1	0.034	0.368



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.007
9.5	0.003	0.007
13.3	0.007	0.033
13.3	0.007	0.035
16.4	0.01	0.065
16.5	0.01	0.067
19	0.014	0.094
19.4	0.014	0.102
21.2	0.017	0.108
21.3	0.017	0.098
23.3	0.021	0.149
23.3	0.021	0.146
25	0.024	0.178
25.2	0.024	0.181
26.9	0.027	0.215
26.9	0.027	0.214
28.3	0.03	0.243
28.4	0.031	0.245
30.1	0.034	0.283
30.1	0.034	0.275

Orifice : **EXP042**

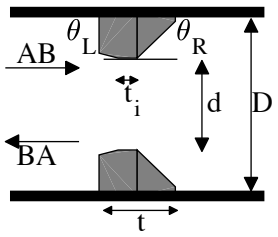
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	10.57 ±0.12
k_{BA}	12.03 ±0.37
λ	0.88

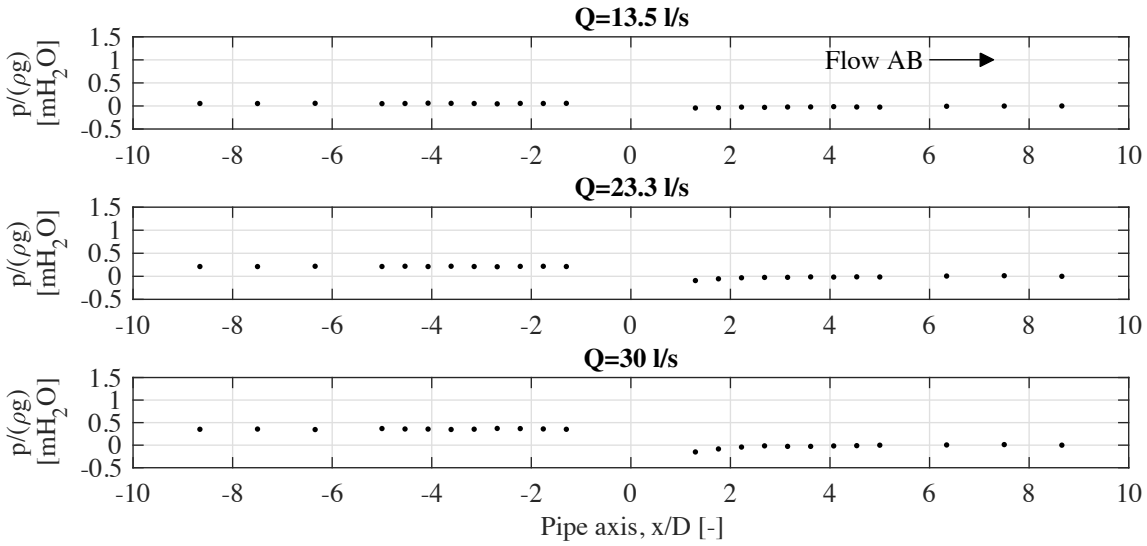
Jet length

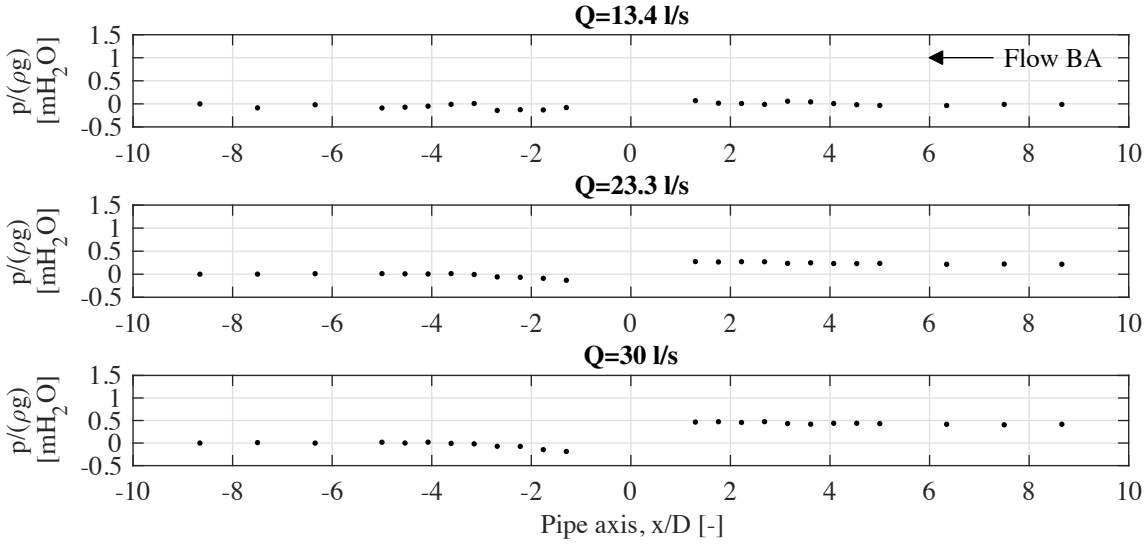
$L_{j,AB}$	3.63
$L_{j,BA}$	3.73

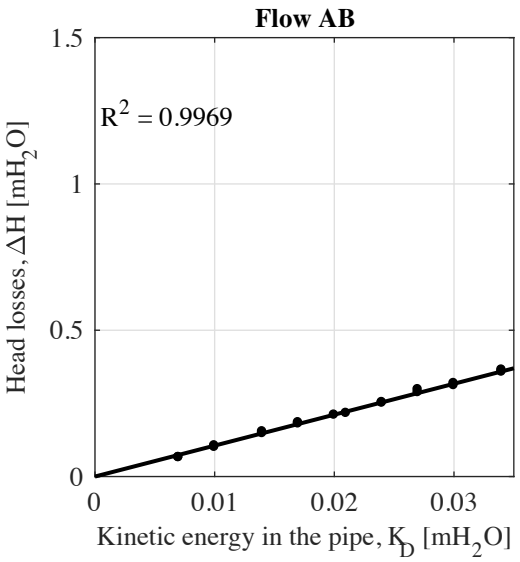


Geometrical parameters

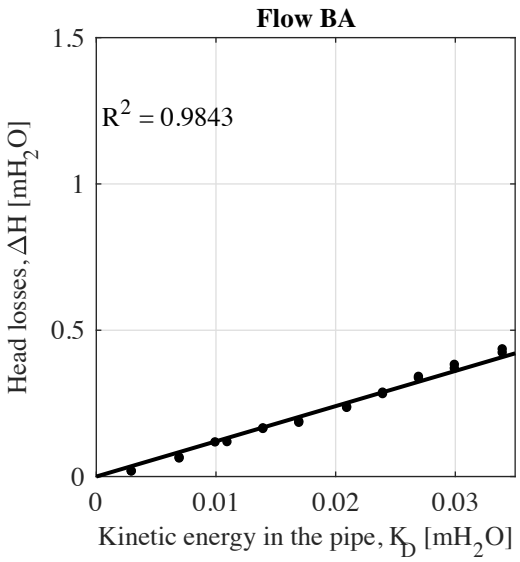
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	15	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.5	0.007	0.065
13.5	0.007	0.065
16.5	0.01	0.1
16.6	0.01	0.105
18.9	0.014	0.153
19.2	0.014	0.147
21.2	0.017	0.18
21.4	0.017	0.184
23.2	0.02	0.21
23.3	0.021	0.216
25.1	0.024	0.253
25.3	0.024	0.251
26.8	0.027	0.287
26.9	0.027	0.297
28.2	0.03	0.311
28.3	0.03	0.318
30	0.034	0.357
30.1	0.034	0.364
30.1	0.034	0.283
30.1	0.034	0.275



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.016
9.4	0.003	0.016
13.2	0.007	0.063
13.4	0.007	0.06
16.4	0.01	0.115
16.7	0.011	0.116
19	0.014	0.161
19.2	0.014	0.163
21.2	0.017	0.186
21.3	0.017	0.182
23.3	0.021	0.236
23.3	0.021	0.233
25.1	0.024	0.28
25.2	0.024	0.285
26.8	0.027	0.334
26.9	0.027	0.339
28.2	0.03	0.38
28.2	0.03	0.367
30	0.034	0.433
30.1	0.034	0.421

Orifice : **EXP043**

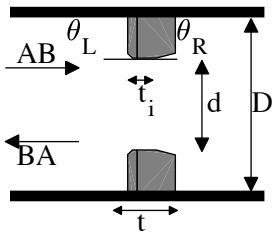
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	14.62 ±0.28
k_{BA}	11.16 ±0.22
λ	0.76

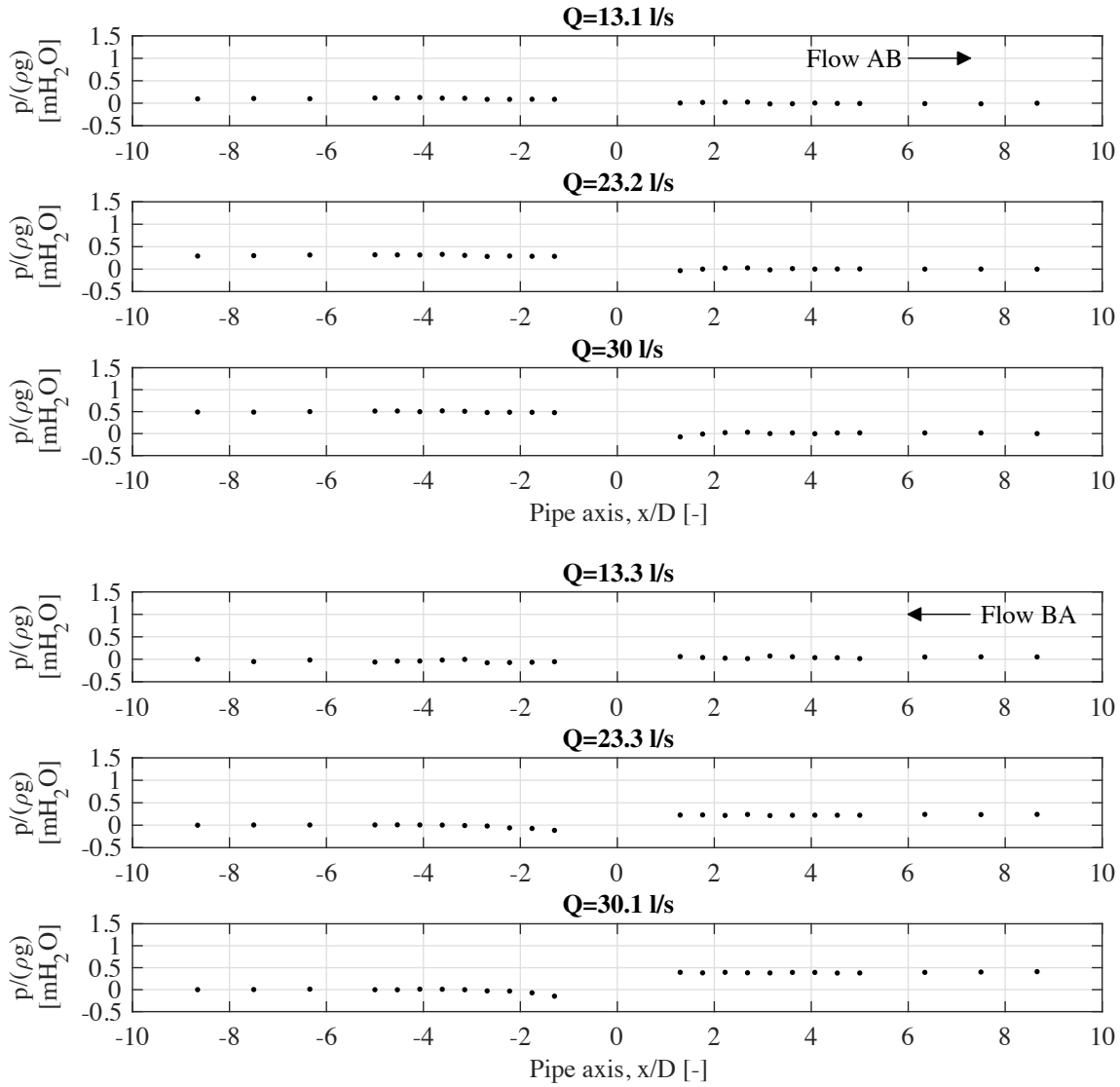
Jet length

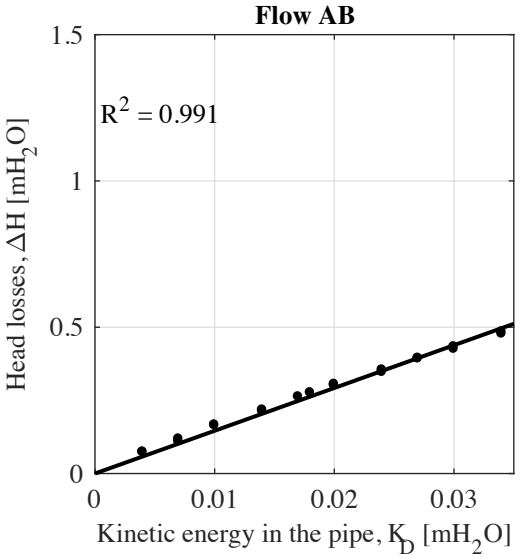
$L_{j,AB}$	3.63
$L_{j,BA}$	3.73



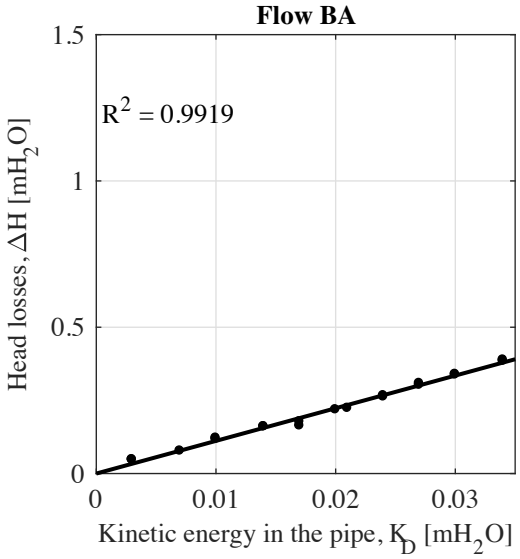
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	64.5	[mm]	α	*0.299*	*[-]*
t_i	32.5	[mm]	α_i	*0.150*	*[-]*
θ_L	45	*[deg]*	θ_R	15	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.073
9.7	0.004	0.073
13.1	0.007	0.109
13.6	0.007	0.118
16.5	0.01	0.166
16.6	0.01	0.164
19.2	0.014	0.213
19.4	0.014	0.217
21.3	0.017	0.262
21.9	0.018	0.276
23.1	0.02	0.305
23.2	0.02	0.301
25	0.024	0.346
25.4	0.024	0.354
26.8	0.027	0.392
26.8	0.027	0.394
28.1	0.03	0.425
28.2	0.03	0.433
29.8	0.034	0.477
30	0.034	0.484



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.047
9.5	0.003	0.047
13.3	0.007	0.077
16.3	0.01	0.117
16.6	0.01	0.121
18.9	0.014	0.16
19.3	0.014	0.16
21.2	0.017	0.177
21.3	0.017	0.163
23.2	0.02	0.218
23.3	0.021	0.223
25.1	0.024	0.262
25.3	0.024	0.266
26.8	0.027	0.302
26.9	0.027	0.308
28.2	0.03	0.339
28.2	0.03	0.337
29.9	0.034	0.384
30.1	0.034	0.388

Orifice : **EXP044**

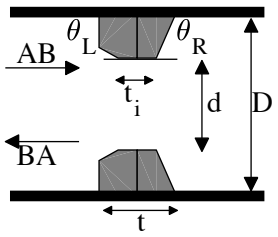
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	11.77 ±0.38
k_{BA}	19.51 ±0.23
λ	0.60

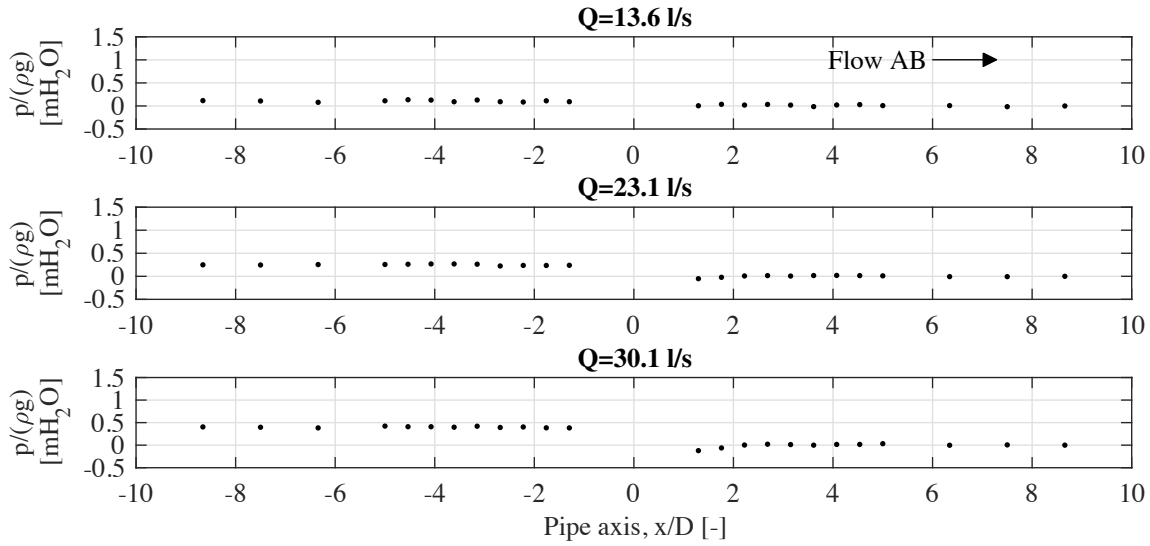
Jet length

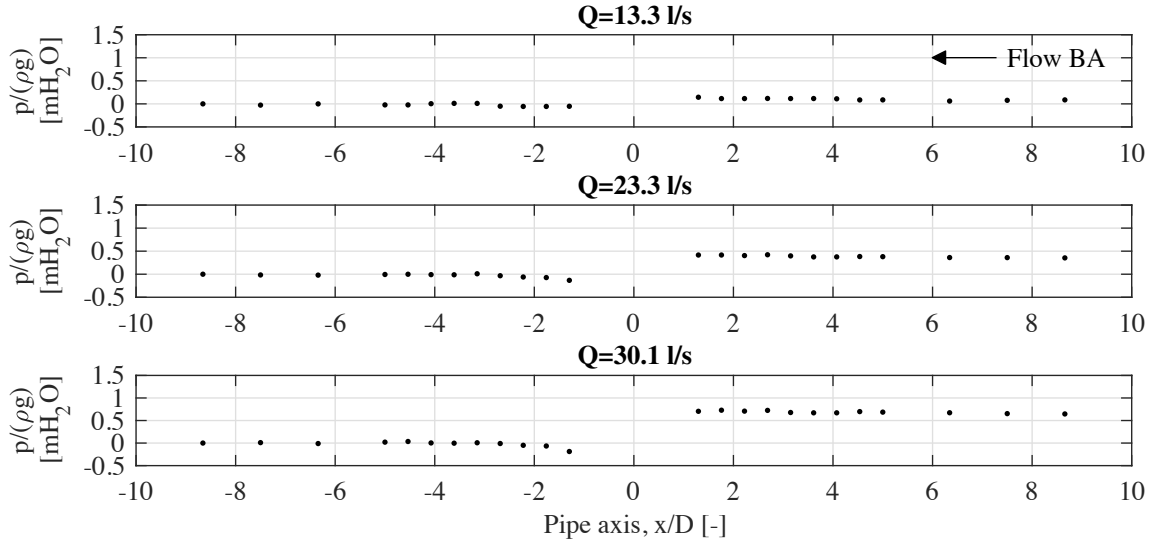
$L_{j,AB}$	3.91
$L_{j,BA}$	4.02

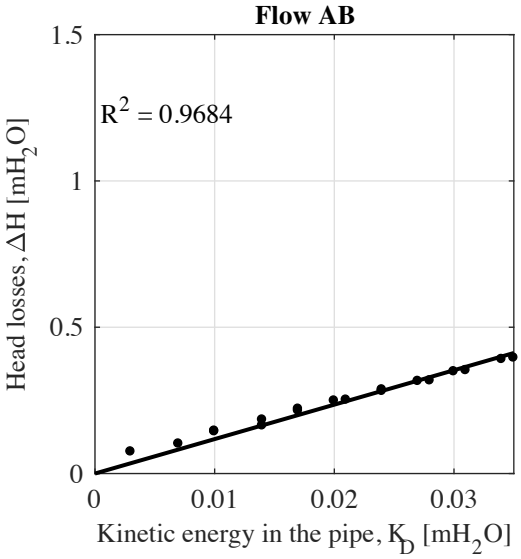


Geometrical parameters

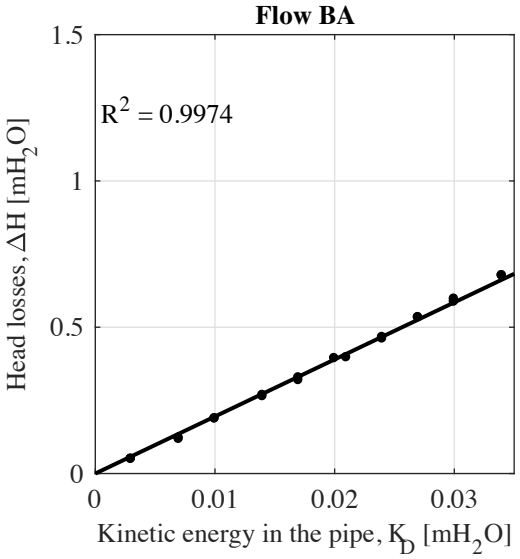
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	30	*[deg]*	θ_R	67	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.074
13.6	0.007	0.101
16.4	0.01	0.143
16.4	0.01	0.145
19.2	0.014	0.163
19.2	0.014	0.183
21	0.017	0.214
21.3	0.017	0.22
23.1	0.02	0.248
23.3	0.021	0.251
25.1	0.024	0.281
25.3	0.024	0.286
26.7	0.027	0.315
27	0.028	0.317
28.2	0.03	0.348
28.4	0.031	0.352
30.1	0.034	0.39
30.2	0.035	0.395



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.049
9.5	0.003	0.049
13.3	0.007	0.117
13.4	0.007	0.121
16.3	0.01	0.187
16.5	0.01	0.187
19.1	0.014	0.263
19.3	0.014	0.267
21.2	0.017	0.318
21.3	0.017	0.327
23.2	0.02	0.393
23.3	0.021	0.396
25	0.024	0.46
25.2	0.024	0.465
26.9	0.027	0.532
26.9	0.027	0.533
28.1	0.03	0.586
28.3	0.03	0.596
30.1	0.034	0.676
30.1	0.034	0.676

Orifice : **EXP045**

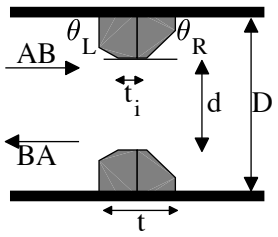
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	11.47 ±0.42
k_{BA}	12.30 ±0.13
λ	0.93

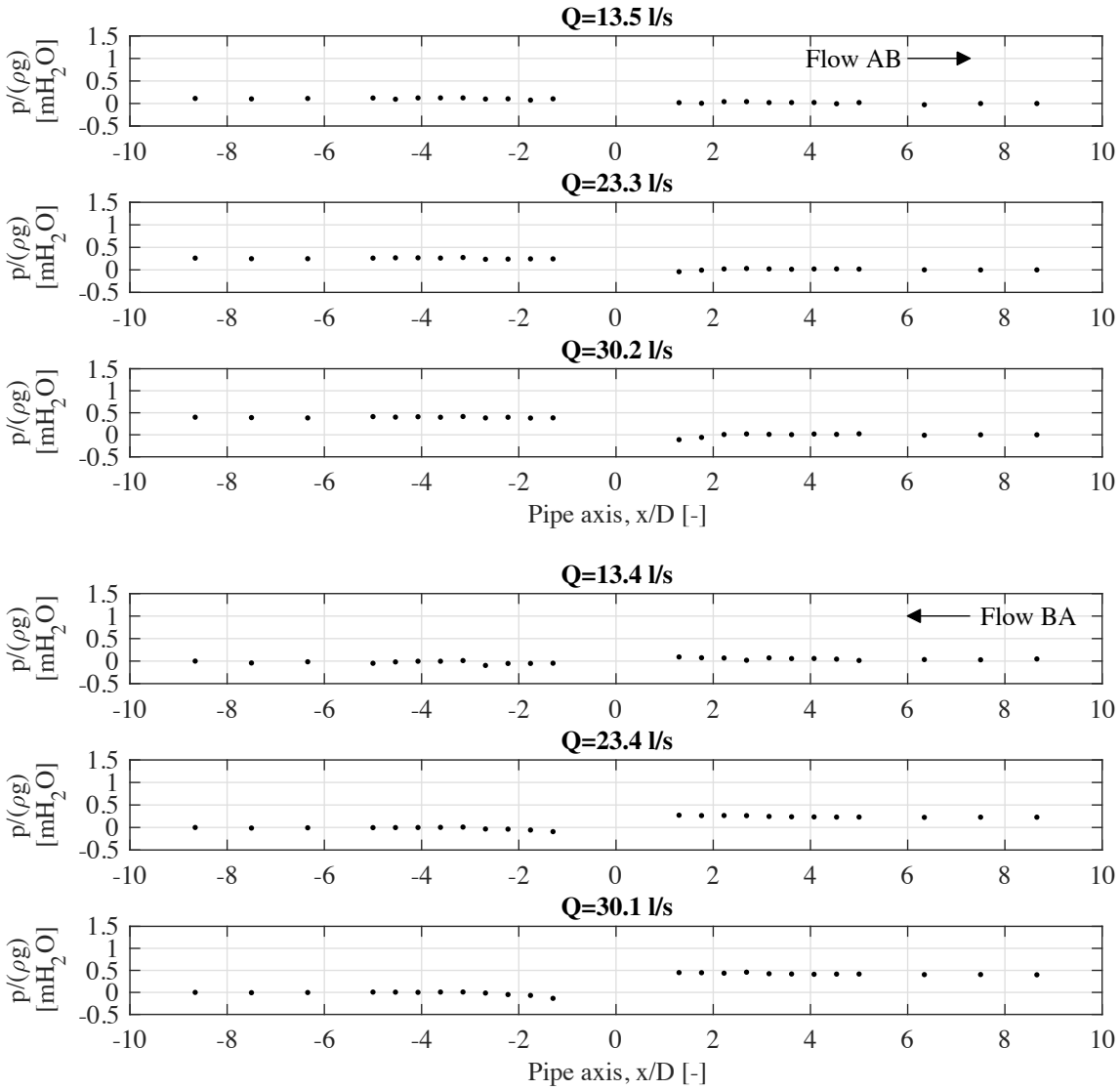
Jet length

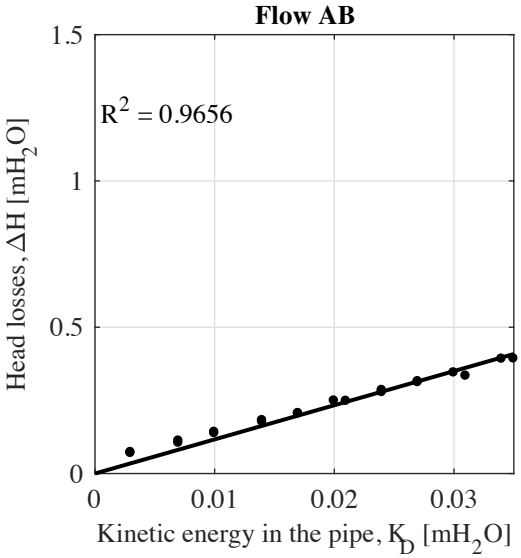
$L_{j,AB}$	3.69
$L_{j,BA}$	4.02



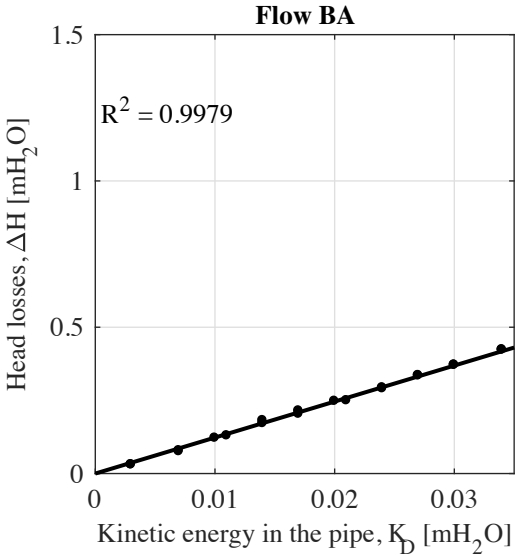
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	32.4	[mm]	α_i	*0.150*	*[-]*
θ_L	30	*[deg]*	θ_R	45	*[deg]*





Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.069
9.5	0.003	0.072
13.3	0.007	0.104
13.5	0.007	0.111
16.4	0.01	0.137
16.6	0.01	0.141
19.1	0.014	0.181
19.3	0.014	0.176
21.2	0.017	0.204
21.3	0.017	0.205
23.2	0.02	0.248
23.3	0.021	0.247
25	0.024	0.277
25.1	0.024	0.284
26.7	0.027	0.311
26.9	0.027	0.314
28.2	0.03	0.344
28.4	0.031	0.333
30.1	0.034	0.391
30.2	0.035	0.392



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.03
9.5	0.003	0.03
13.4	0.007	0.075
13.4	0.007	0.078
16.4	0.01	0.121
16.8	0.011	0.129
19.2	0.014	0.181
19.2	0.014	0.171
21.3	0.017	0.214
21.4	0.017	0.203
23.2	0.02	0.247
23.4	0.021	0.249
25	0.024	0.29
25.2	0.024	0.293
26.8	0.027	0.334
26.9	0.027	0.335
28.2	0.03	0.37
28.3	0.03	0.371
30.1	0.034	0.423
30.1	0.034	0.422

Orifice : **EXP046**

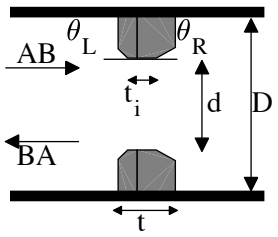
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	14.09 ±0.53
k_{BA}	9.41 ±0.37
λ	0.67

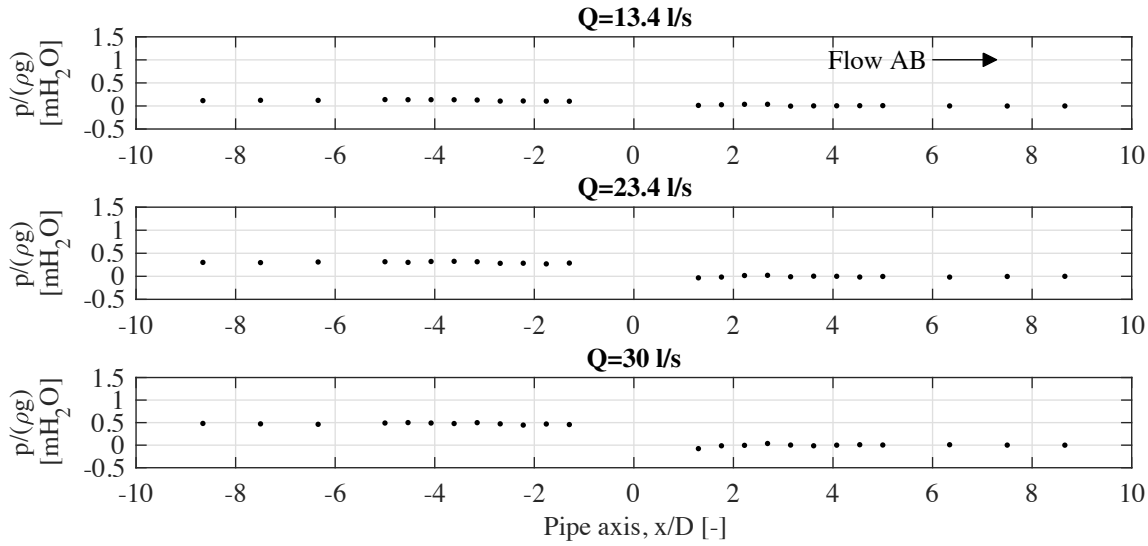
Jet length

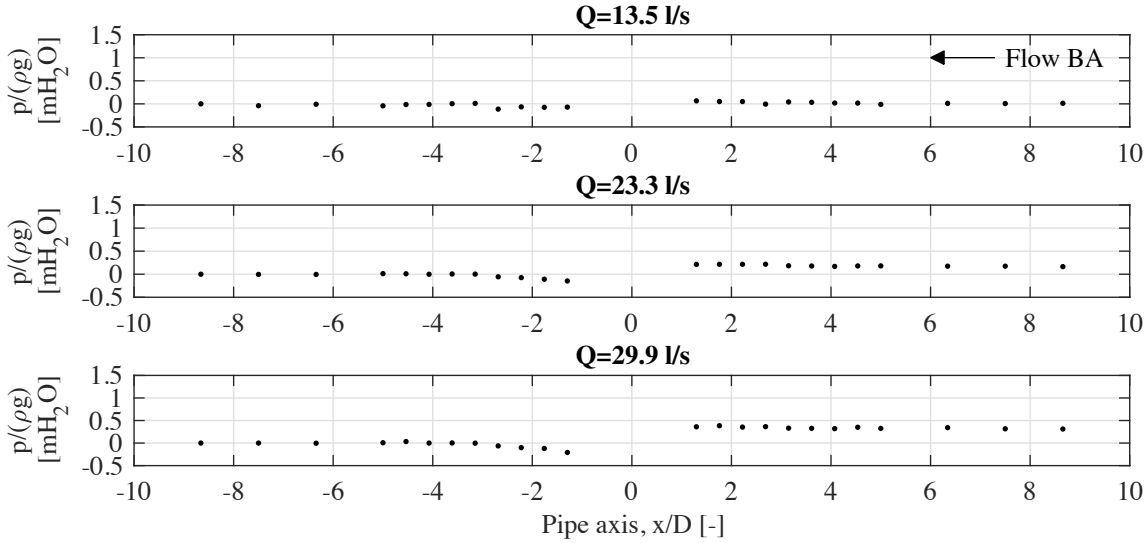
$L_{j,AB}$	3.78
$L_{j,BA}$	3.99

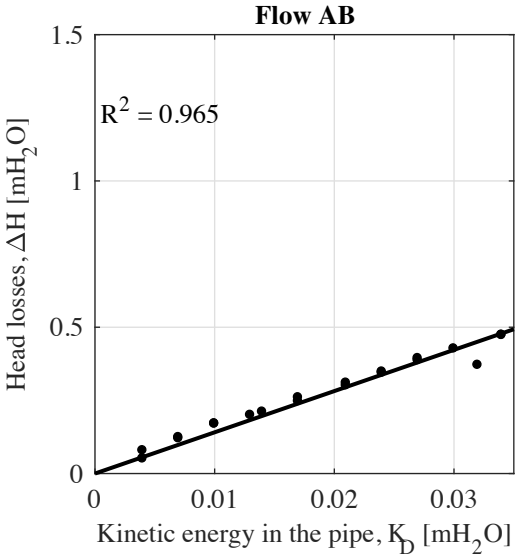


Geometrical parameters

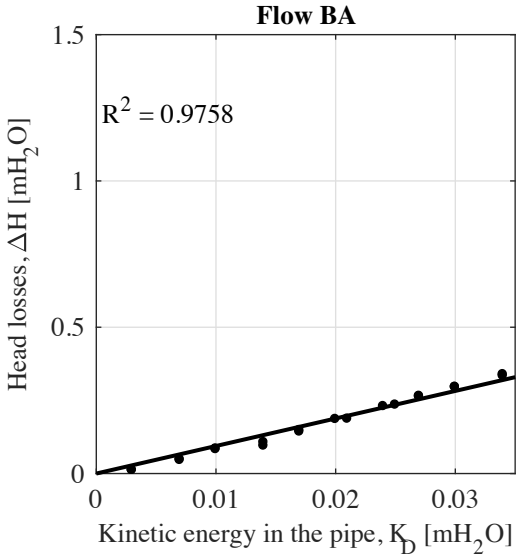
d	107.0	[mm]	β	*0.495*	*[-]*
t	64.5	[mm]	α	*0.299*	*[-]*
t_i	32.4	[mm]	α_i	*0.150*	*[-]*
θ_L	45	*[deg]*	θ_R	30	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.078
9.7	0.004	0.05
13.4	0.007	0.119
13.6	0.007	0.123
16.4	0.01	0.17
16.5	0.01	0.169
18.8	0.013	0.199
19	0.014	0.21
21.2	0.017	0.246
21.2	0.017	0.259
23.3	0.021	0.3
23.4	0.021	0.309
25.1	0.024	0.343
25.1	0.024	0.347
26.7	0.027	0.386
26.8	0.027	0.393
28.3	0.03	0.426
28.9	0.032	0.37
29.9	0.034	0.473
30	0.034	0.472



Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.011
9.6	0.003	0.011
13.4	0.007	0.048
13.5	0.007	0.045
16.4	0.01	0.082
16.5	0.01	0.084
19.2	0.014	0.094
19.5	0.014	0.106
21.2	0.017	0.142
21.3	0.017	0.147
23.2	0.02	0.185
23.3	0.021	0.186
25.2	0.024	0.229
25.5	0.025	0.234
26.8	0.027	0.262
26.9	0.027	0.264
28.2	0.03	0.295
28.2	0.03	0.294
29.9	0.034	0.333
30	0.034	0.338

Orifice : **EXP047**

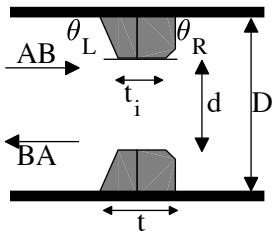
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	18.81 ±0.41
k_{BA}	11.11 ±0.26
λ	0.59

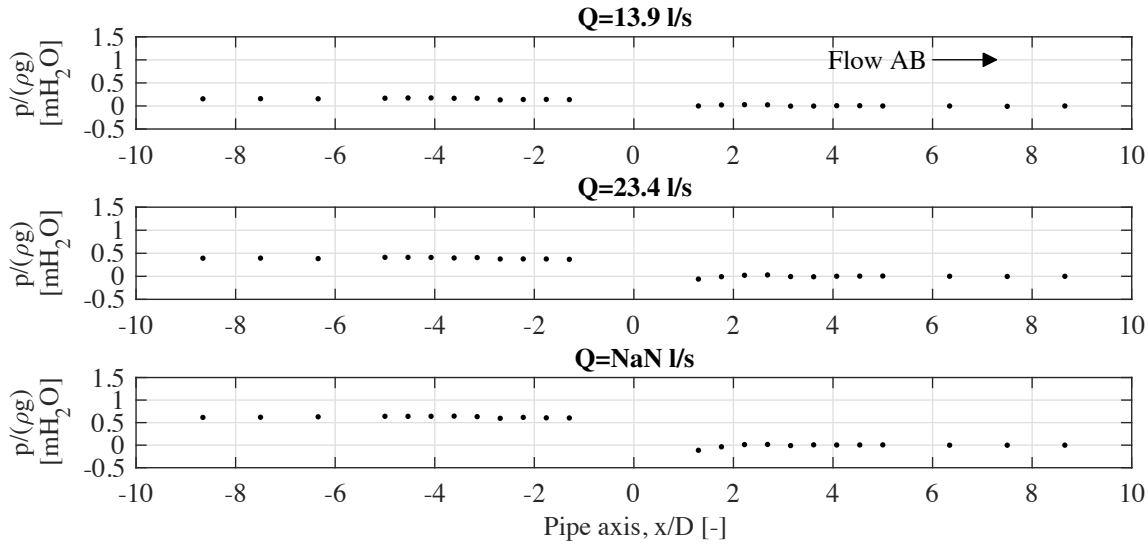
Jet length

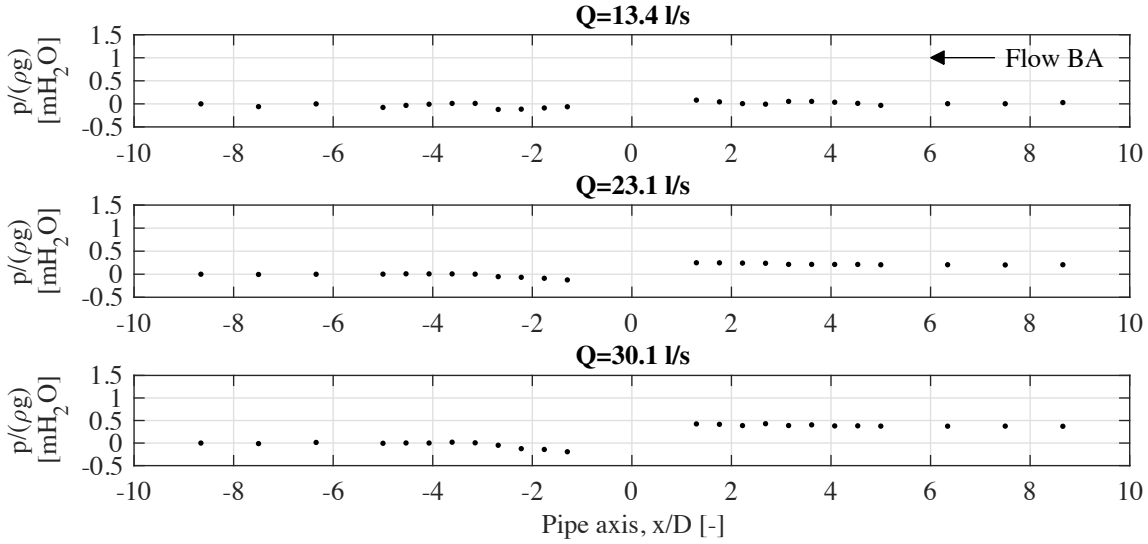
$L_{j,AB}$	3.69
$L_{j,BA}$	3.81

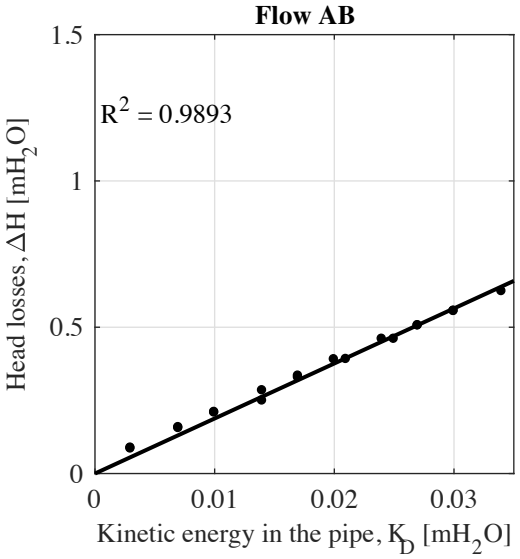


Geometrical parameters

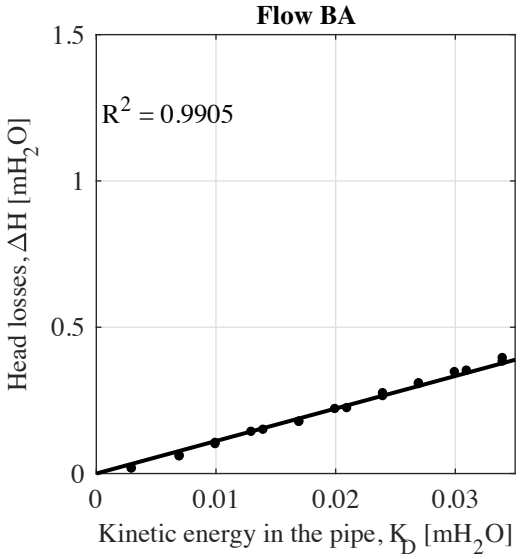
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	53.5	[mm]	α_i	*0.248*	*[-]*
θ_L	67	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.087
9.4	0.003	0.084
13.6	0.007	0.154
13.9	0.007	0.157
16.3	0.01	0.207
16.4	0.01	0.209
19.3	0.014	0.248
19.4	0.014	0.283
21.1	0.017	0.327
21.3	0.017	0.333
23.2	0.02	0.389
23.4	0.021	0.39
25.4	0.024	0.459
25.5	0.025	0.459
26.9	0.027	0.505
26.9	0.027	0.505
28.2	0.03	0.554
28.3	0.03	0.555
30	0.034	0.622
30	0.034	0.338



Q [l/s]	K_D [m]	ΔH [m]
9.3	0.003	0.016
9.3	0.003	0.016
13.4	0.007	0.057
13.4	0.007	0.06
16.4	0.01	0.099
16.5	0.01	0.103
18.8	0.013	0.141
19.3	0.014	0.148
21.1	0.017	0.176
21.1	0.017	0.175
23.1	0.02	0.219
23.3	0.021	0.222
25.1	0.024	0.263
25.4	0.024	0.273
26.8	0.027	0.304
26.9	0.027	0.307
28.3	0.03	0.345
28.4	0.031	0.35
29.8	0.034	0.381
30.1	0.034	0.393

Orifice : **EXP048**

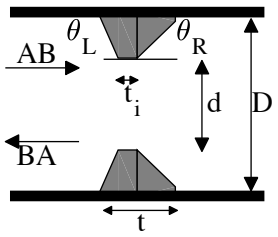
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	26.35 ±0.48
k_{BA}	16.78 ±0.29
λ	0.59

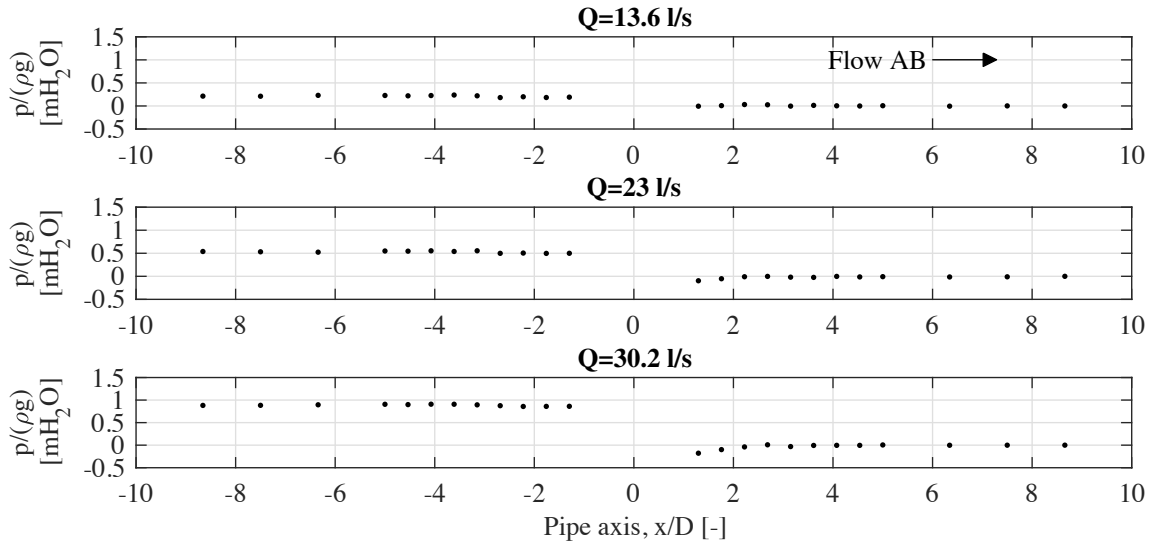
Jet length

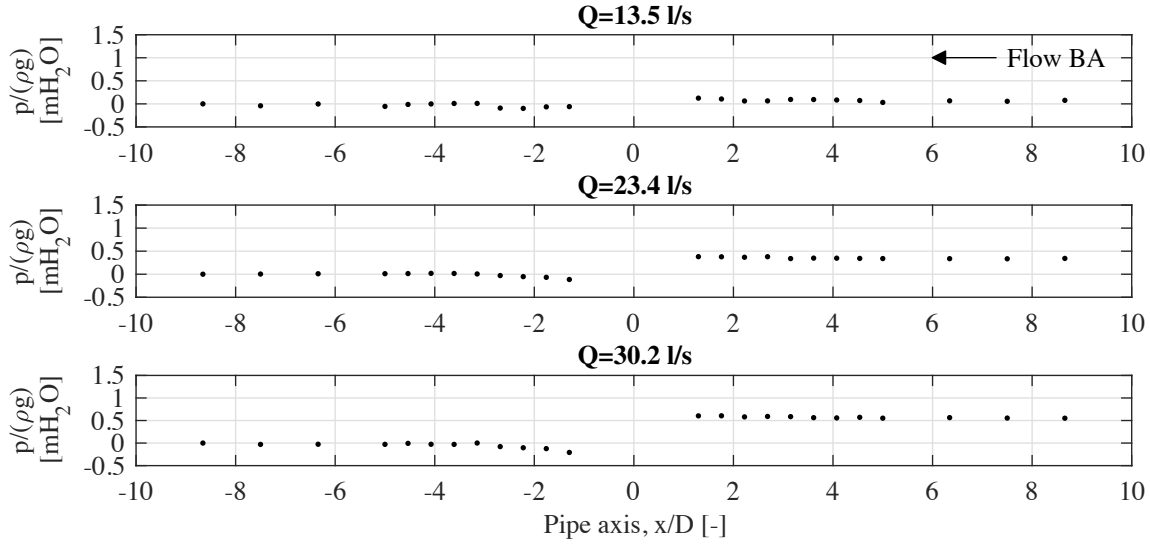
$L_{j,AB}$	3.72
$L_{j,BA}$	4.22

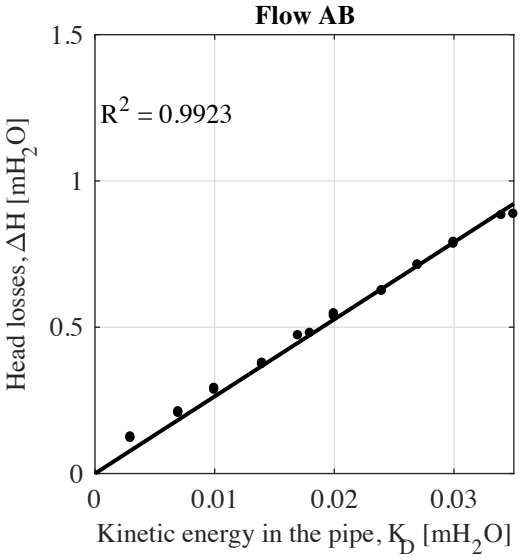


Geometrical parameters

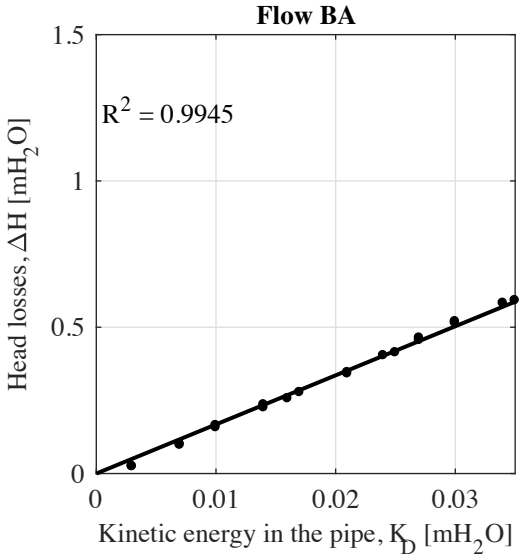
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	67	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.12
9.6	0.003	0.125
13.5	0.007	0.206
13.6	0.007	0.211
16.3	0.01	0.285
16.4	0.01	0.291
19.1	0.014	0.373
19.2	0.014	0.377
21.3	0.017	0.471
21.6	0.018	0.479
23	0.02	0.537
23.2	0.02	0.546
25	0.024	0.625
25.1	0.024	0.623
26.8	0.027	0.711
26.8	0.027	0.713
28.2	0.03	0.784
28.3	0.03	0.79
30.1	0.034	0.882
30.2	0.035	0.886



Q [l/s]	K_D [m]	ΔH [m]
9.3	0.003	0.024
9.3	0.003	0.024
13.2	0.007	0.097
13.5	0.007	0.1
16.2	0.01	0.157
16.5	0.01	0.164
19	0.014	0.225
19.3	0.014	0.235
20.6	0.016	0.256
21.2	0.017	0.277
23.3	0.021	0.341
23.4	0.021	0.345
25.2	0.024	0.403
25.5	0.025	0.413
26.8	0.027	0.463
26.8	0.027	0.455
28.2	0.03	0.514
28.3	0.03	0.519
30	0.034	0.582
30.2	0.035	0.591

Orifice : **EXP049**

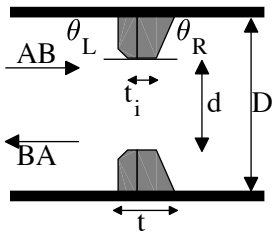
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	18.62 ±0.51
k_{BA}	23.86 ±0.30
λ	0.78

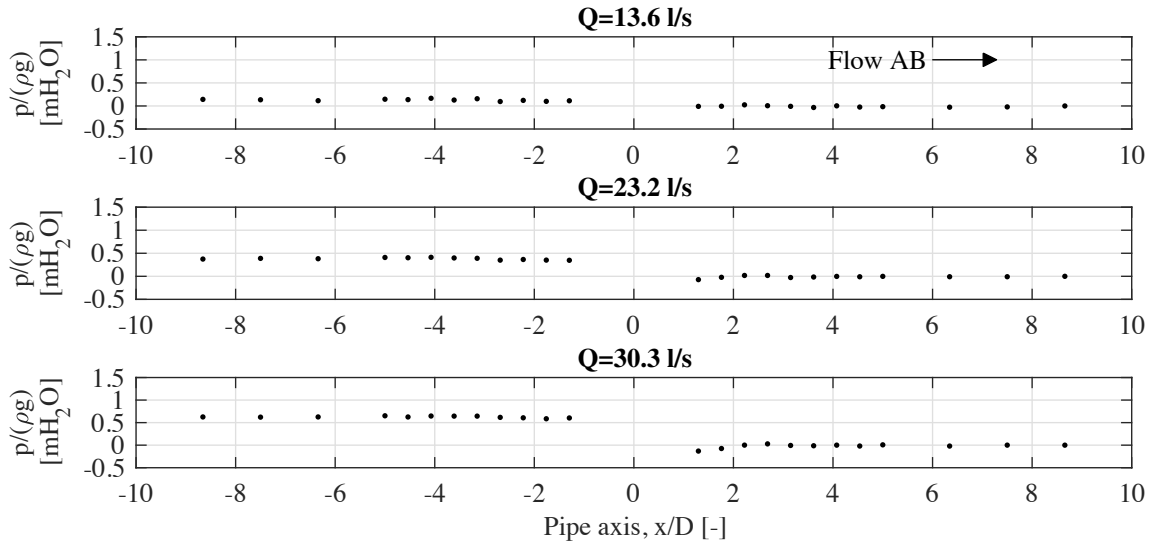
Jet length

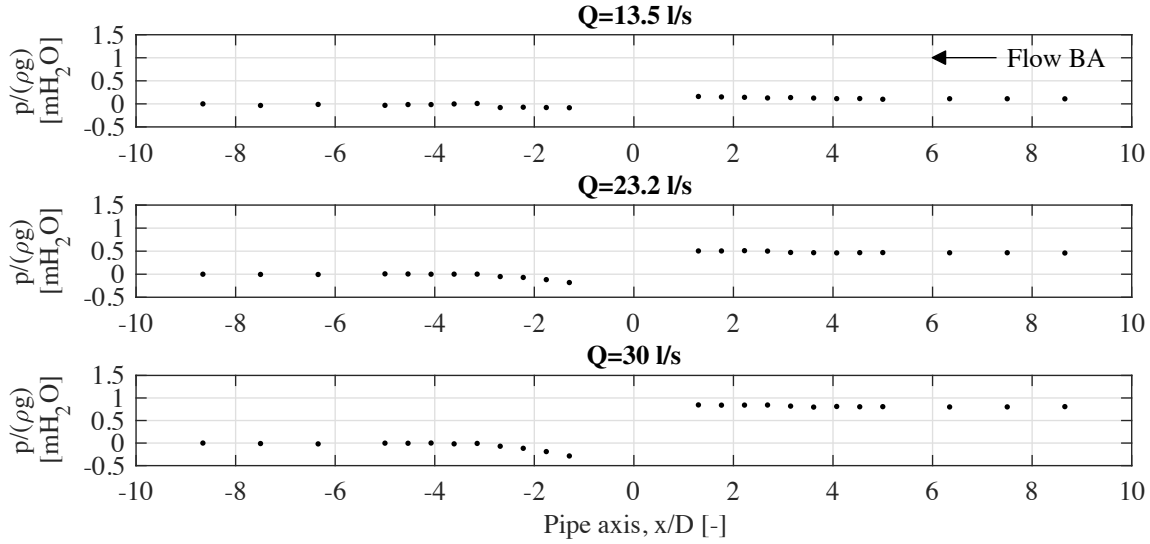
$L_{j,AB}$	3.80
$L_{j,BA}$	3.48

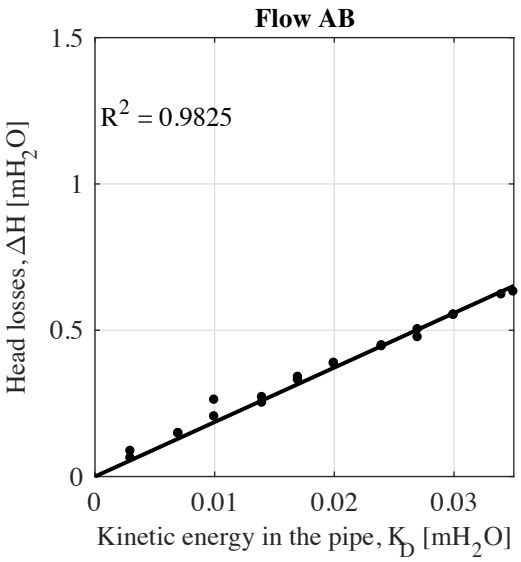


Geometrical parameters

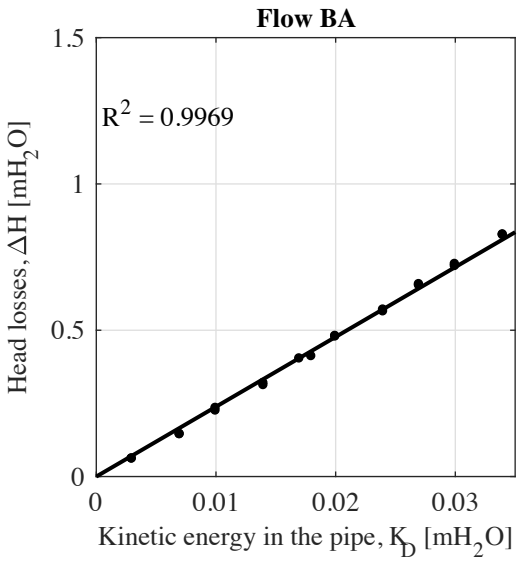
d	107.0	[mm]	β	*0.495*	*[-]*
t	69.5	[mm]	α	*0.299*	*[-]*
t_i	32.5	[mm]	α_i	*0.150*	*[-]*
θ_L	45	*[deg]*	θ_R	67	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.086
9.5	0.003	0.062
13.4	0.007	0.146
13.6	0.007	0.147
16	0.01	0.261
16.4	0.01	0.204
19.1	0.014	0.27
19.2	0.014	0.251
20.9	0.017	0.329
21.3	0.017	0.339
23.1	0.02	0.385
23.2	0.02	0.387
25.2	0.024	0.447
25.2	0.024	0.444
26.7	0.027	0.475
26.9	0.027	0.502
28.2	0.03	0.551
28.2	0.03	0.552
30.1	0.034	0.621
30.3	0.035	0.631



Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.06
13.2	0.007	0.143
13.5	0.007	0.144
16.3	0.01	0.224
16.5	0.01	0.233
19	0.014	0.311
19.1	0.014	0.318
21.4	0.017	0.402
21.7	0.018	0.41
23.2	0.02	0.479
23.2	0.02	0.477
25.1	0.024	0.563
25.2	0.024	0.569
26.8	0.027	0.652
26.9	0.027	0.656
28.1	0.03	0.718
28.2	0.03	0.725
30	0.034	0.826
30	0.034	0.824
30.3	0.035	0.631

Orifice : **EXP050**

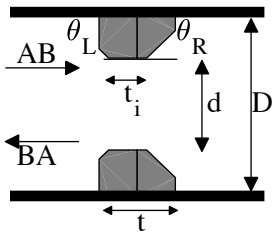
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	13.40 ±0.36
k_{BA}	10.30 ±0.42
λ	0.77

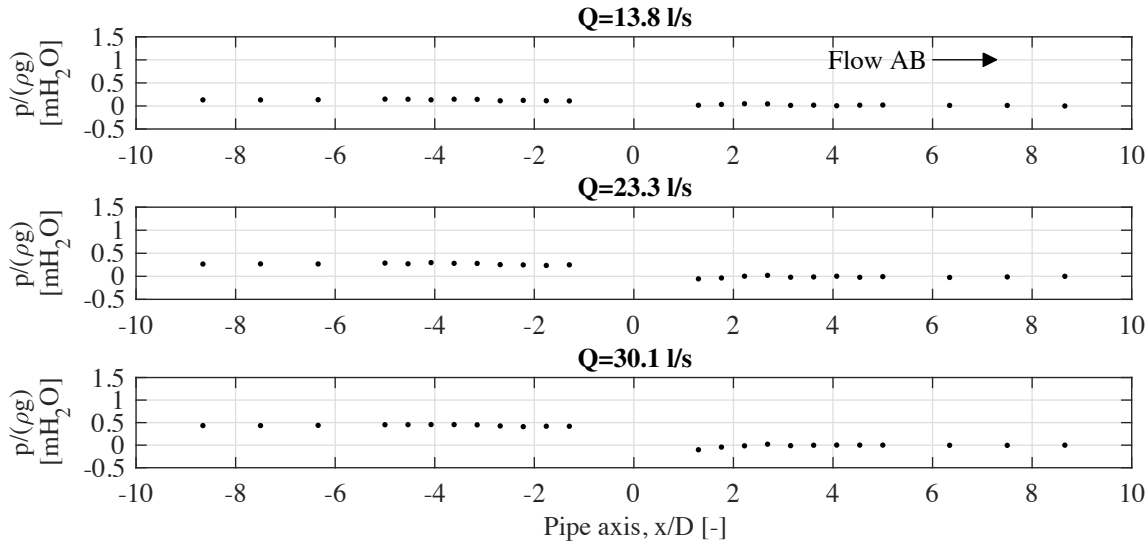
Jet length

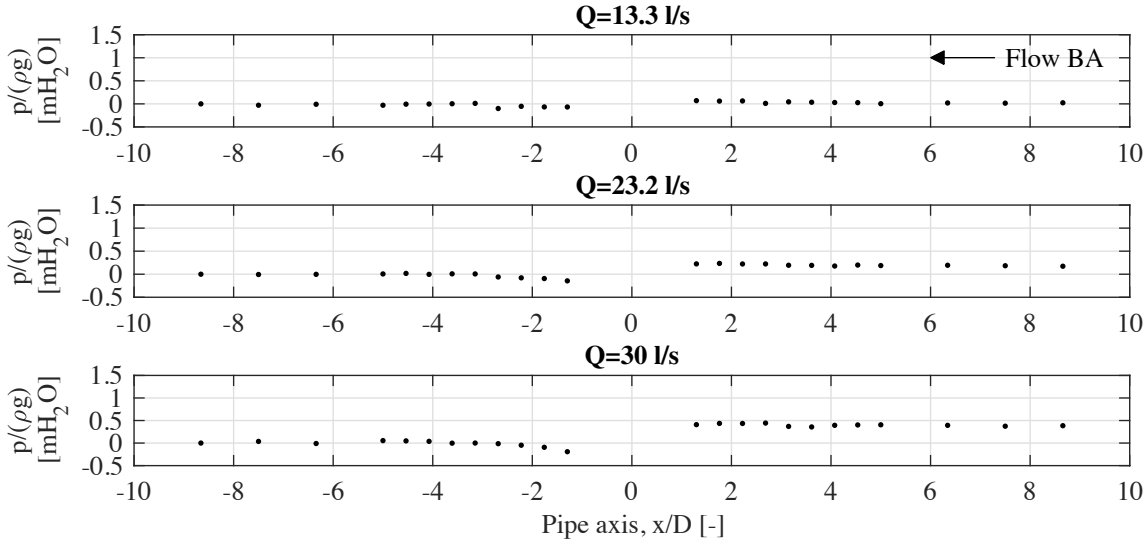
$L_{j,AB}$	3.93
$L_{j,BA}$	3.95

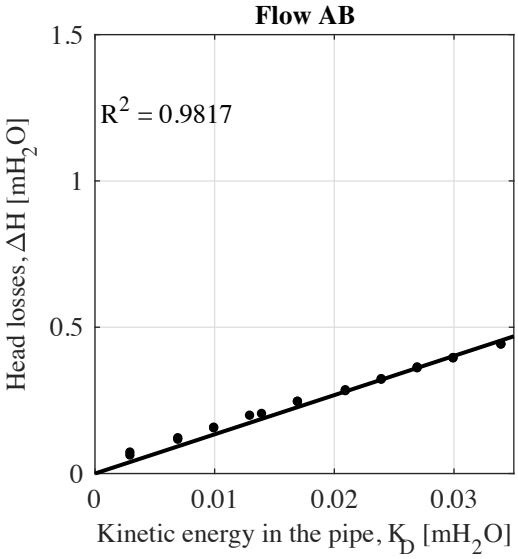


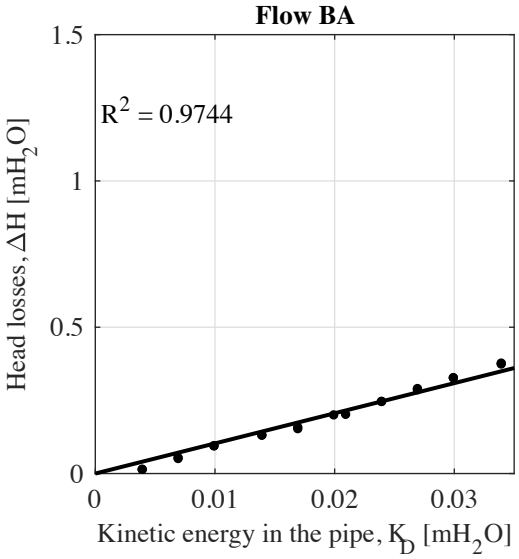
Geometrical parameters

d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	53.5	[mm]	α_i	*0.248*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*









Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.07
9.5	0.003	0.06
13.5	0.007	0.114
13.8	0.007	0.119
16.4	0.01	0.153
16.4	0.01	0.155
18.8	0.013	0.196
19.4	0.014	0.202
21.2	0.017	0.243
21.3	0.017	0.244
23.3	0.021	0.28
23.3	0.021	0.283
25.1	0.024	0.321
25.2	0.024	0.319
26.7	0.027	0.358
26.9	0.027	0.361
28.2	0.03	0.392
28.3	0.03	0.393
30.1	0.034	0.439
30.1	0.034	0.44

Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.011
9.7	0.004	0.011
13.3	0.007	0.048
13.4	0.007	0.051
16.4	0.01	0.091
16.4	0.01	0.092
18.9	0.014	0.128
19	0.014	0.128
21.2	0.017	0.155
21.3	0.017	0.15
23.2	0.02	0.197
23.3	0.021	0.199
25.1	0.024	0.243
25.2	0.024	0.243
26.8	0.027	0.283
26.9	0.027	0.287
28.3	0.03	0.324
28.3	0.03	0.324
30	0.034	0.374
30	0.034	0.371

Orifice : **EXP051**

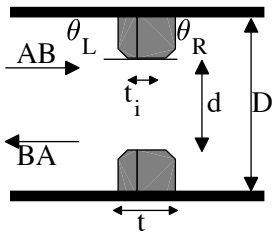
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	13.66 ±0.32
k_{BA}	10.95 ±0.33
λ	0.80

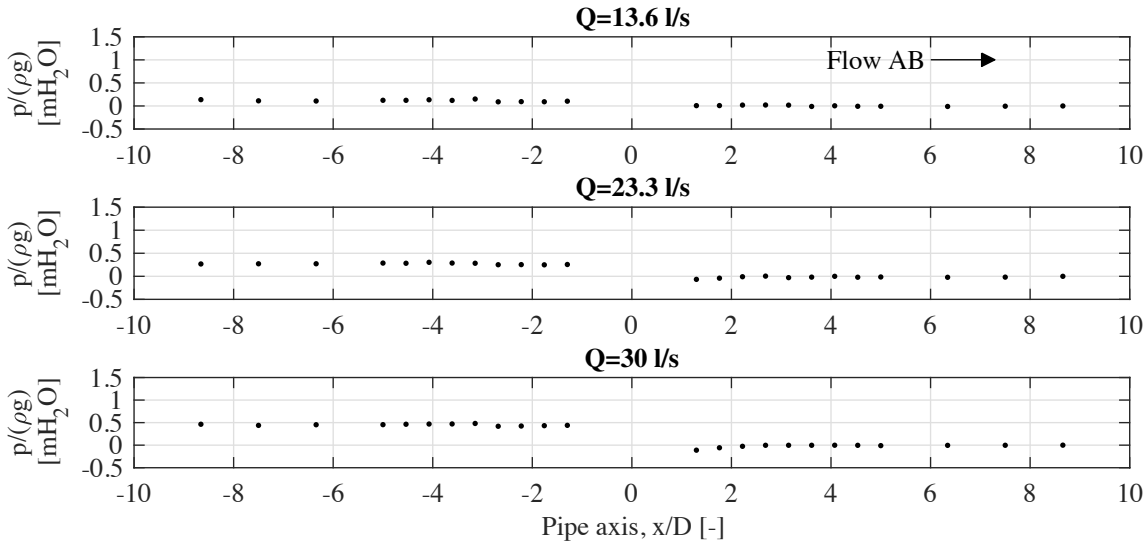
Jet length

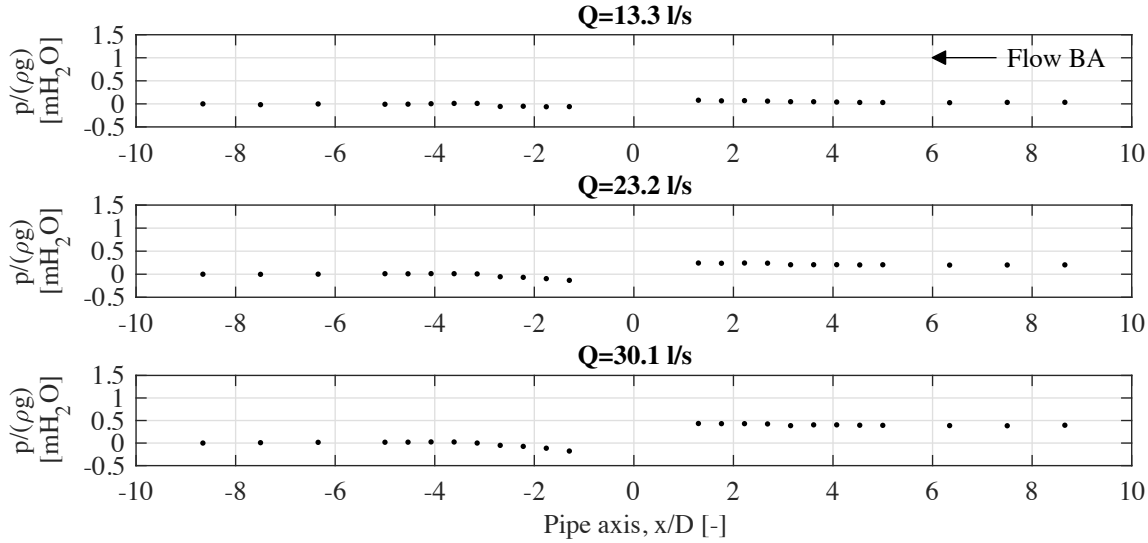
$L_{j,AB}$	3.42
$L_{j,BA}$	4.14

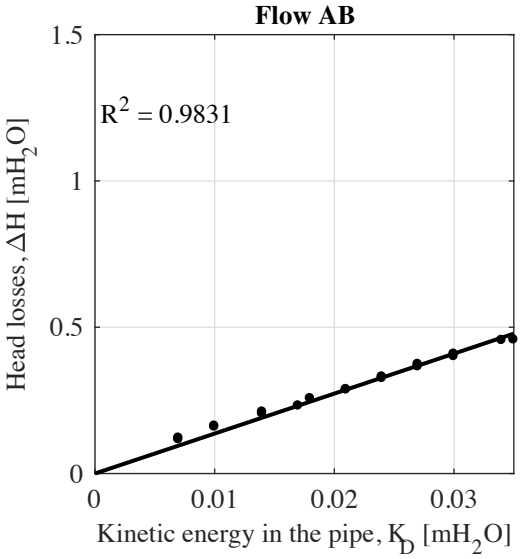


Geometrical parameters

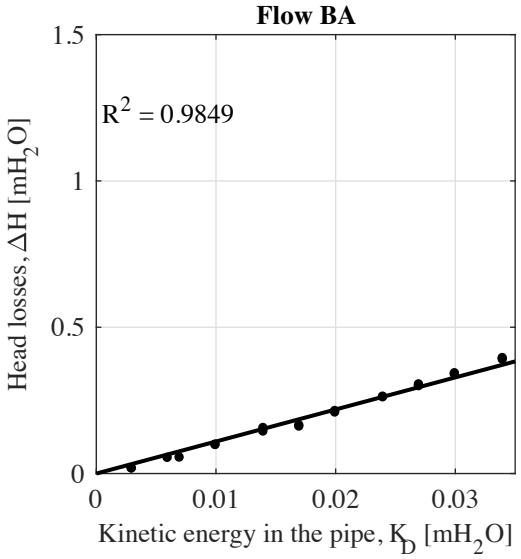
d	107.0	[mm]	β	*0.495*	*[-]*
t	64.5	[mm]	α	*0.299*	*[-]*
t_i	43.0	[mm]	α_i	*0.199*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
13.4	0.007	0.116
13.6	0.007	0.121
16.5	0.01	0.162
16.6	0.01	0.159
19	0.014	0.204
19.3	0.014	0.21
21.3	0.017	0.231
21.7	0.018	0.256
23.3	0.021	0.287
23.3	0.021	0.286
25.2	0.024	0.325
25.3	0.024	0.33
26.6	0.027	0.373
26.8	0.027	0.365
28.2	0.03	0.4
28.3	0.03	0.408
30	0.034	0.455
30.2	0.035	0.457



Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.016
9.6	0.003	0.016
12.9	0.006	0.052
13.3	0.007	0.053
16.3	0.01	0.096
16.4	0.01	0.097
19	0.014	0.154
19.1	0.014	0.142
21.1	0.017	0.159
21.2	0.017	0.163
23.1	0.02	0.207
23.2	0.02	0.212
25.2	0.024	0.259
25.2	0.024	0.261
26.9	0.027	0.303
26.9	0.027	0.297
28.2	0.03	0.337
28.3	0.03	0.341
30	0.034	0.388
30.1	0.034	0.393

Orifice : **EXP052**

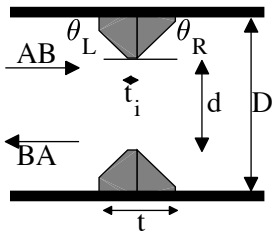
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	20.37 ±0.46
k_{BA}	18.49 ±0.26
λ	0.91

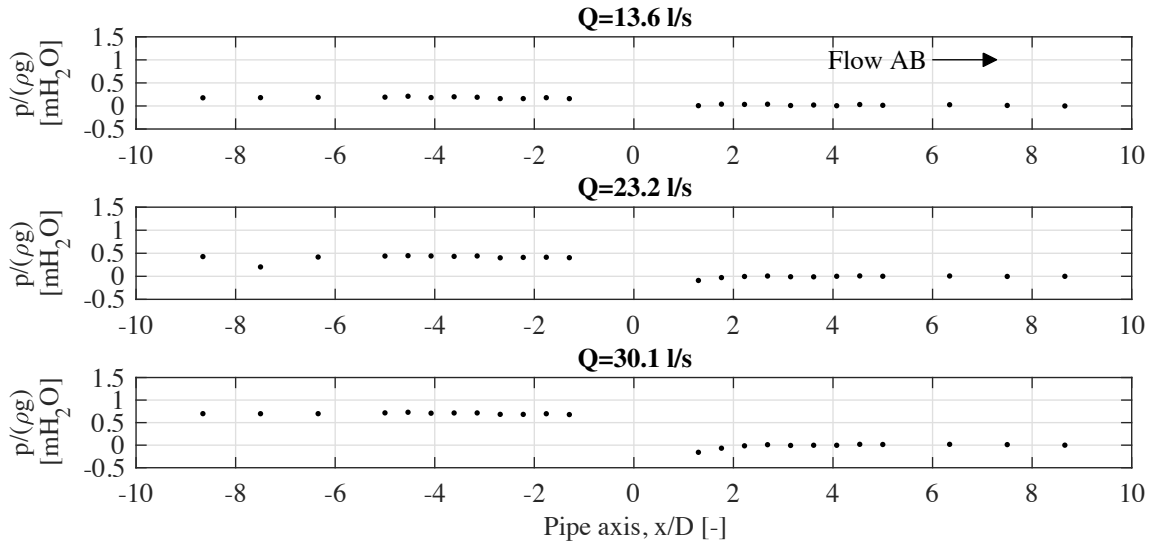
Jet length

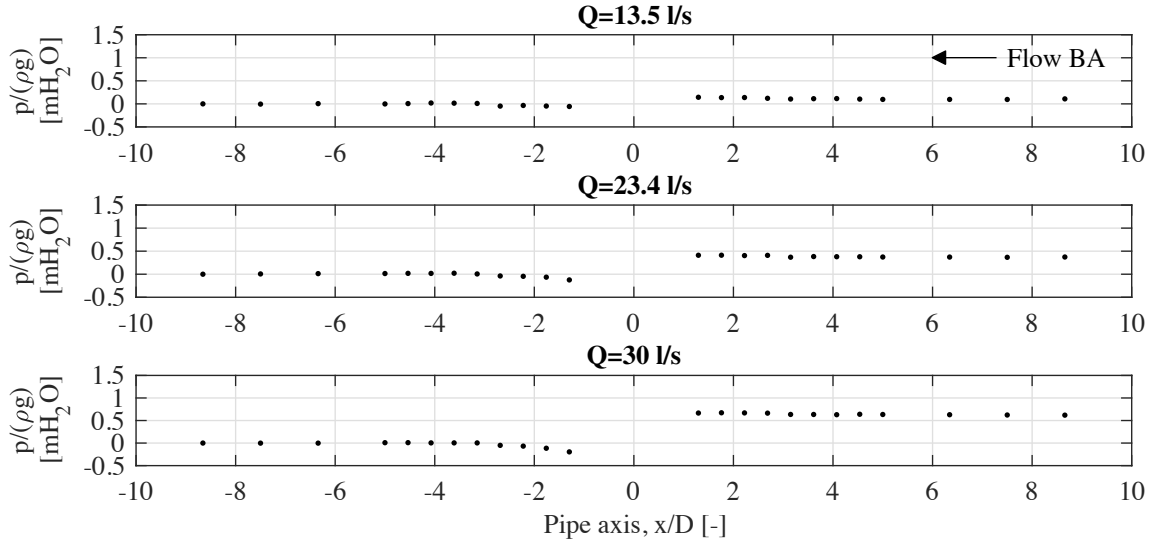
$L_{j,AB}$	3.46
$L_{j,BA}$	4.02

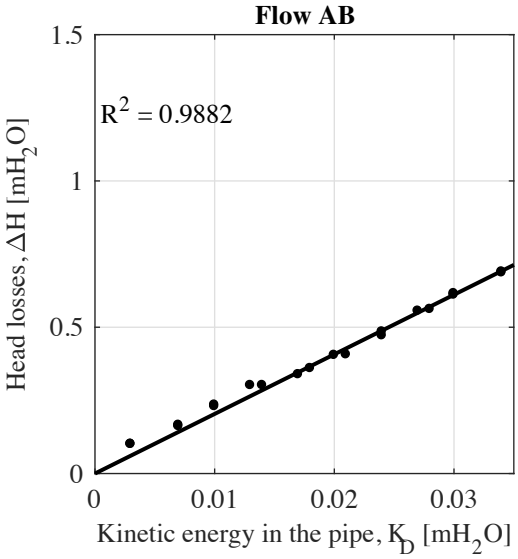


Geometrical parameters

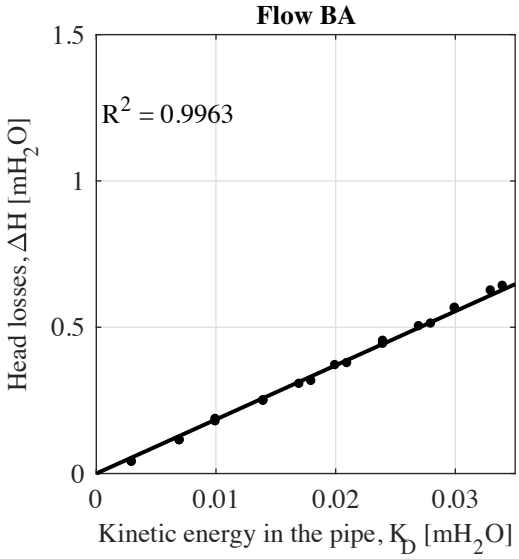
d	107.0	[mm]	β	*0.495*	*[-]*
t	86.0	[mm]	α	*0.398*	*[-]*
t_i	11.0	[mm]	α_i	*0.05*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.6	0.003	0.1
9.6	0.003	0.1
13.3	0.007	0.161
13.6	0.007	0.165
16.4	0.01	0.234
16.4	0.01	0.229
18.7	0.013	0.301
19.1	0.014	0.301
21.1	0.017	0.338
21.8	0.018	0.359
23.2	0.02	0.404
23.3	0.021	0.406
25.1	0.024	0.471
25.2	0.024	0.484
26.8	0.027	0.555
27.1	0.028	0.561
28.2	0.03	0.61
28.2	0.03	0.615
30	0.034	0.686
30.1	0.034	0.689



Q [l/s]	K_D [m]	ΔH [m]
9	0.003	0.039
9	0.003	0.039
13.4	0.007	0.112
13.5	0.007	0.113
16.3	0.01	0.177
16.6	0.01	0.185
19	0.014	0.247
19.1	0.014	0.249
21.2	0.017	0.305
21.5	0.018	0.315
23.2	0.02	0.369
23.4	0.021	0.376
25.1	0.024	0.442
25.4	0.024	0.452
26.7	0.027	0.502
27	0.028	0.511
28.3	0.03	0.563
28.3	0.03	0.565
29.7	0.033	0.624
30	0.034	0.64

Orifice : **EXP053**

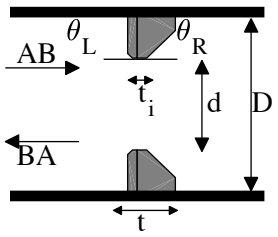
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	21.78 ±0.49
k_{BA}	17.36 ±0.46
λ	0.80

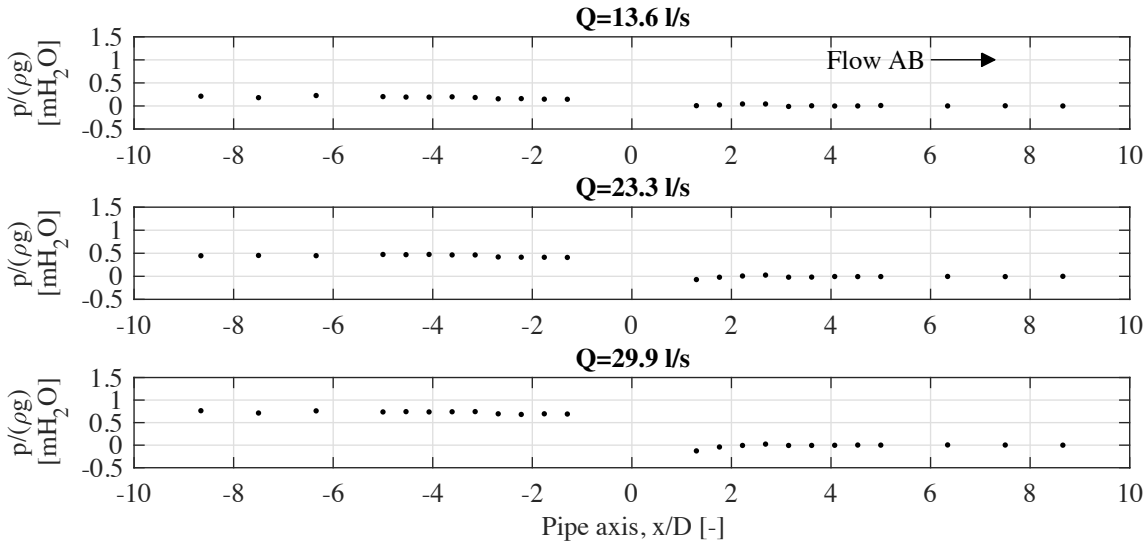
Jet length

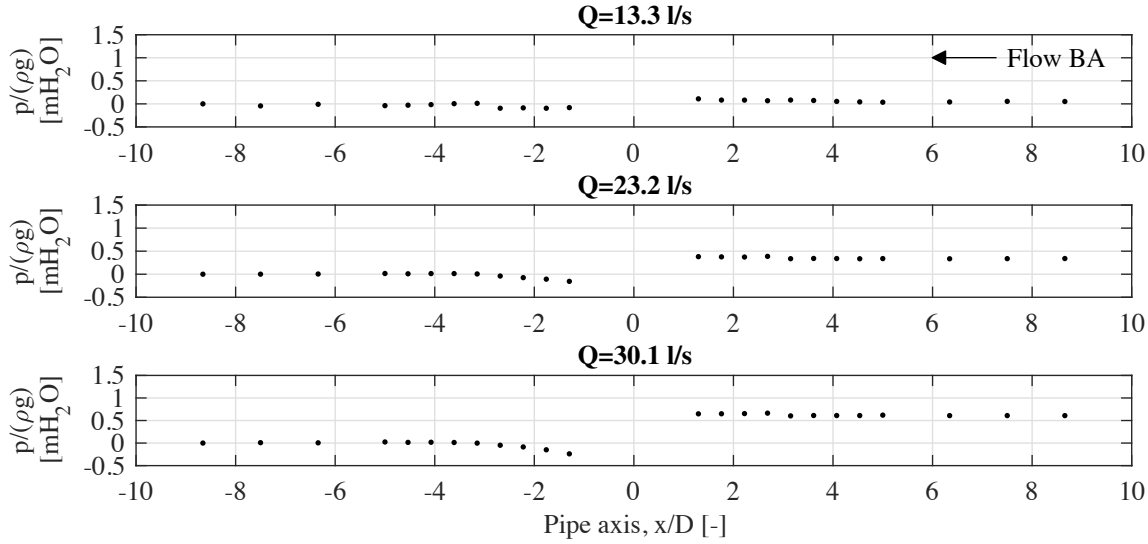
$L_{j,AB}$	3.75
$L_{j,BA}$	3.93

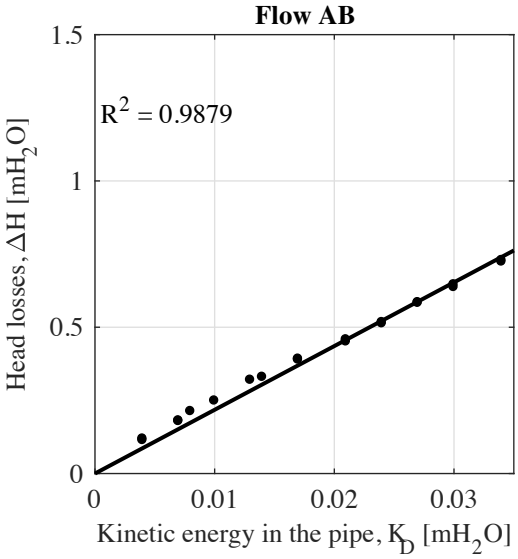


Geometrical parameters

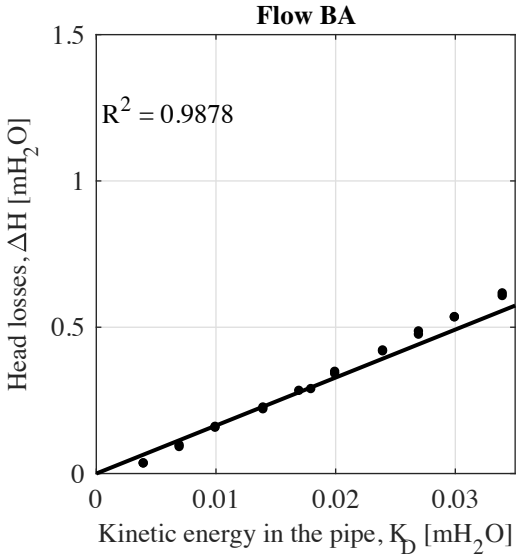
d	107.0	[mm]	β	*0.495*	*[-]*
t	54.0	[mm]	α	*0.250*	*[-]*
t_i	16.2	[mm]	α_i	*0.075*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.118
9.7	0.004	0.113
13.4	0.007	0.178
13.6	0.007	0.18
14.8	0.008	0.212
16.5	0.01	0.248
18.8	0.013	0.319
19.2	0.014	0.329
21.2	0.017	0.391
21.3	0.017	0.388
23.3	0.021	0.45
23.4	0.021	0.457
25	0.024	0.512
25.1	0.024	0.516
26.7	0.027	0.582
26.8	0.027	0.584
28	0.03	0.636
28.2	0.03	0.645
29.9	0.034	0.723
30.1	0.034	0.728



Q [l/s]	K_D [m]	ΔH [m]
9.7	0.004	0.033
9.7	0.004	0.033
13.3	0.007	0.089
13.5	0.007	0.095
16.4	0.01	0.155
16.5	0.01	0.158
19	0.014	0.218
19.2	0.014	0.224
21.2	0.017	0.281
21.5	0.018	0.287
23.1	0.02	0.339
23.2	0.02	0.346
25.2	0.024	0.416
25.3	0.024	0.419
26.7	0.027	0.473
26.8	0.027	0.484
28.1	0.03	0.532
28.3	0.03	0.533
29.9	0.034	0.605
30.1	0.034	0.614

Orifice : **EXP054**

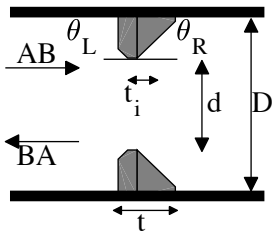
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	21.66 ±0.45
k_{BA}	21.19 ±0.33
λ	0.98

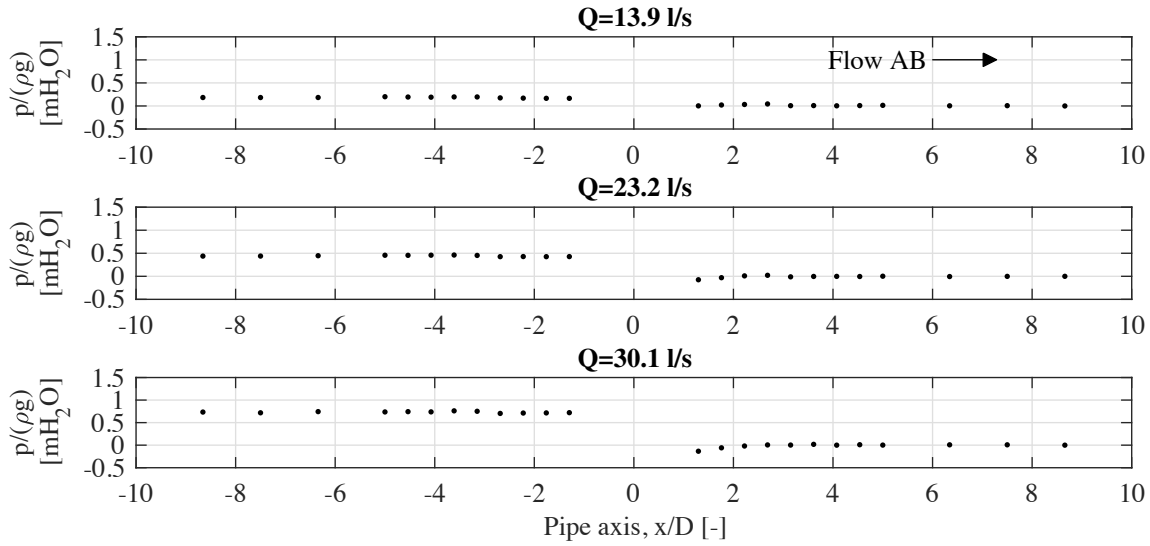
Jet length

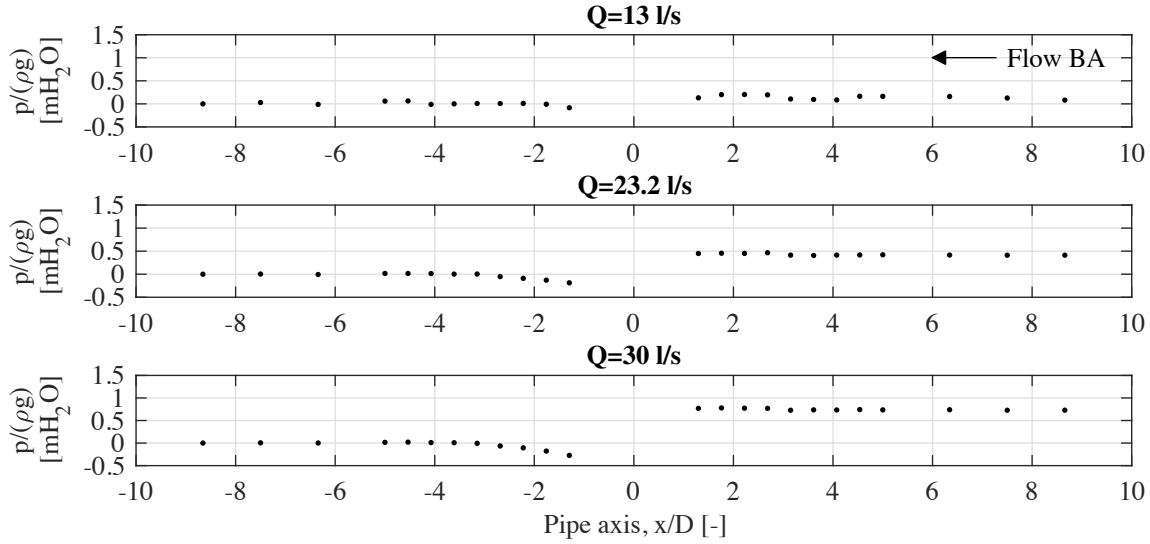
$L_{j,AB}$	3.95
$L_{j,BA}$	4.32

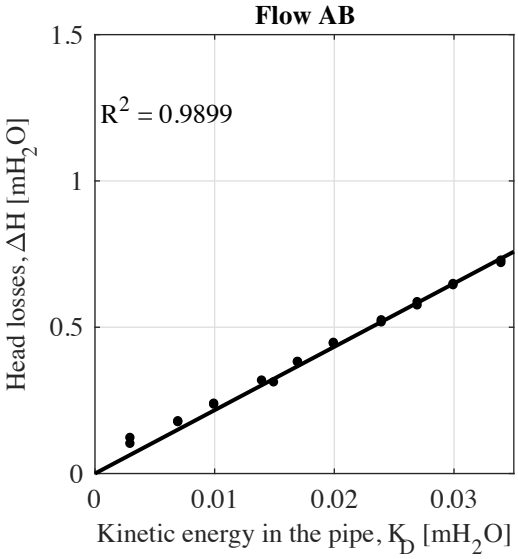


Geometrical parameters

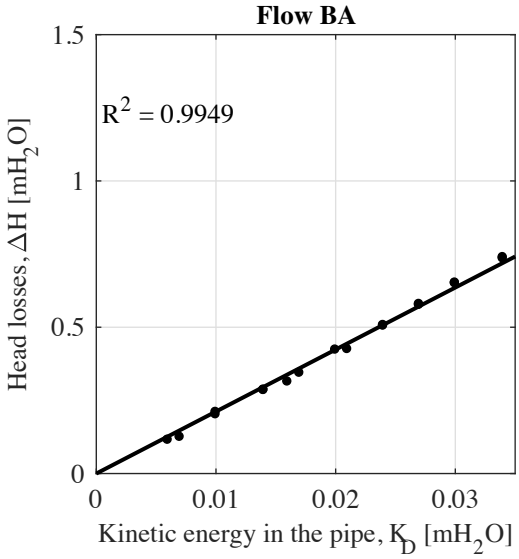
d	107.0	[mm]	β	*0.495*	*[-]*
t	64.5	[mm]	α	*0.299*	*[-]*
t_i	11.0	[mm]	α_i	*0.051*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.12
9.5	0.003	0.1
13.6	0.007	0.174
13.9	0.007	0.177
16.4	0.01	0.237
16.4	0.01	0.234
19.2	0.014	0.316
19.6	0.015	0.31
21.2	0.017	0.38
21.2	0.017	0.379
23.1	0.02	0.442
23.2	0.02	0.445
25.1	0.024	0.515
25.2	0.024	0.522
26.7	0.027	0.573
26.9	0.027	0.584
28.2	0.03	0.646
28.2	0.03	0.642
30.1	0.034	0.726
30.1	0.034	0.718



Q [l/s]	K_D [m]	ΔH [m]
13	0.006	0.114
13.3	0.007	0.124
16.3	0.01	0.201
16.6	0.01	0.209
19.1	0.014	0.284
19.1	0.014	0.285
20.6	0.016	0.313
21.2	0.017	0.343
23.2	0.02	0.422
23.3	0.021	0.424
25.1	0.024	0.504
25.1	0.024	0.506
26.7	0.027	0.578
26.7	0.027	0.575
28.1	0.03	0.649
28.2	0.03	0.651
29.9	0.034	0.734
30	0.034	0.738

Orifice : **EXP055**

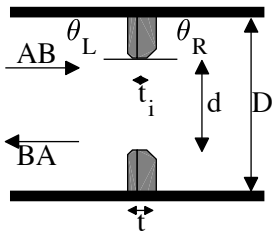
Type : 2-chamfered orifice

Head loss coefficients

k_{AB}	21.84 ±0.53
k_{BA}	17.74 ±0.63
λ	0.81

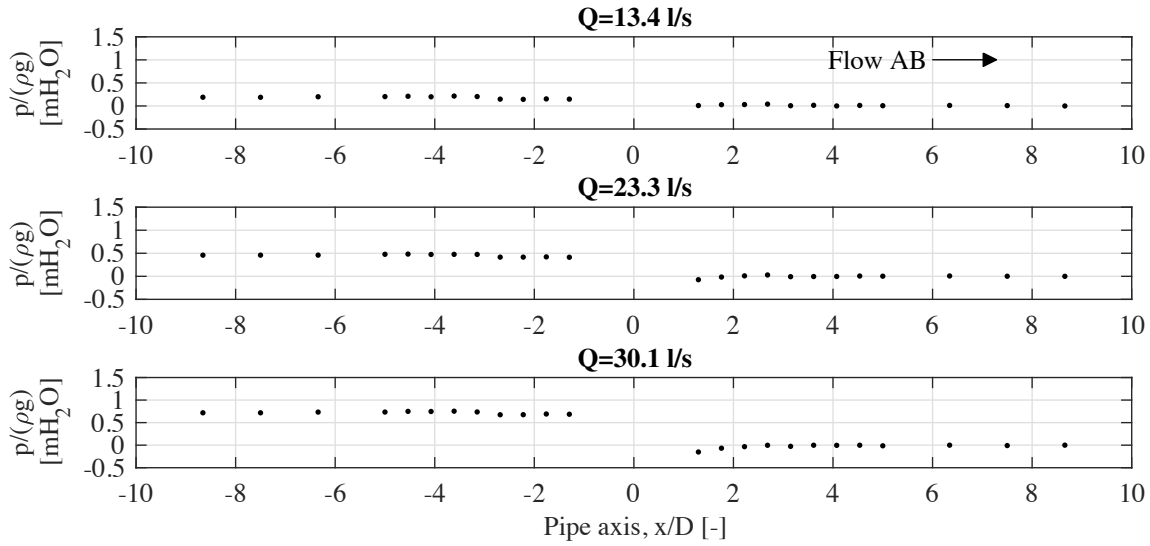
Jet length

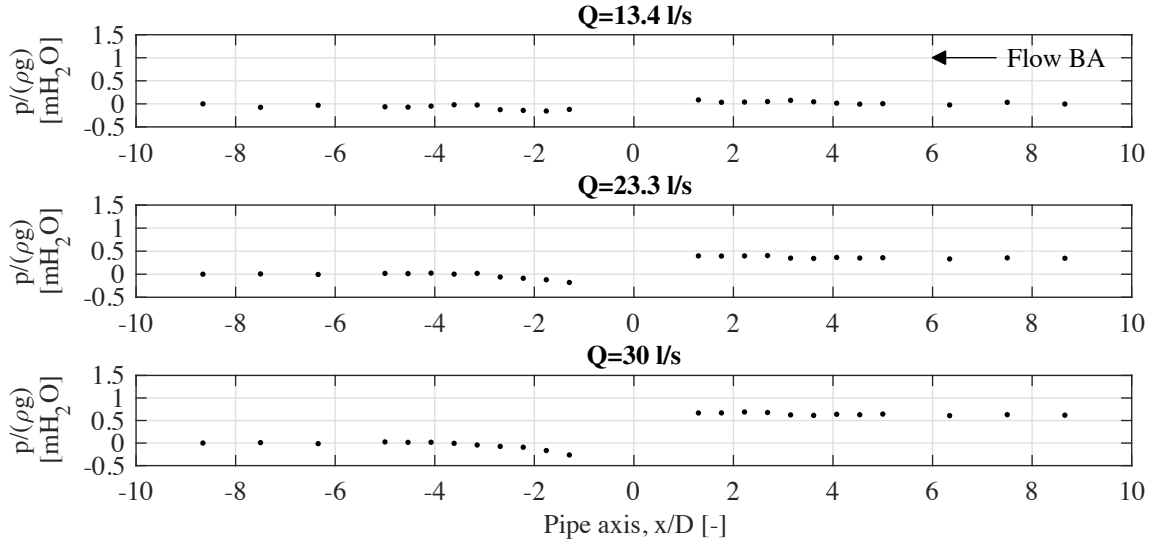
$L_{j,AB}$	3.59
$L_{j,BA}$	4.04

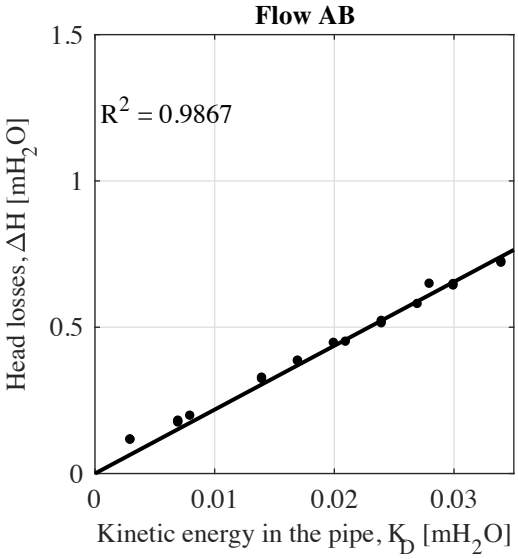


Geometrical parameters

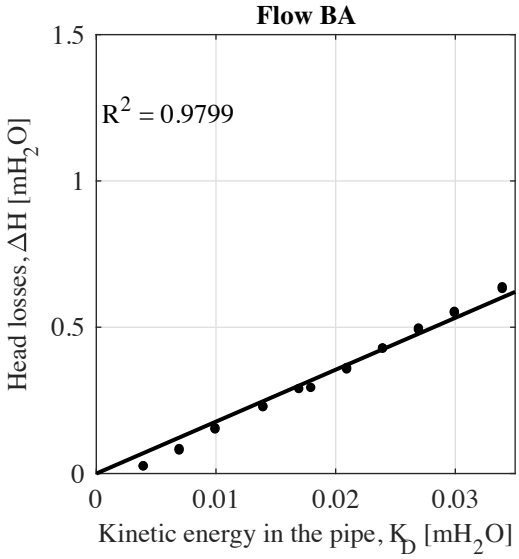
d	107.0	[mm]	β	*0.495*	*[-]*
t	32.5	[mm]	α	*0.150*	*[-]*
t_i	16.2	[mm]	α_i	*0.075*	*[-]*
θ_L	45	*[deg]*	θ_R	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.4	0.003	0.116
9.4	0.003	0.117
13.3	0.007	0.176
13.4	0.007	0.179
13.5	0.007	0.182
14.4	0.008	0.199
19.3	0.014	0.331
19.3	0.014	0.327
21.3	0.017	0.389
21.3	0.017	0.390
23.1	0.02	0.452
23.3	0.021	0.456
25.1	0.024	0.520
25.2	0.024	0.529
26.8	0.027	0.588
27.1	0.028	0.658
28.1	0.03	0.652
28.2	0.03	0.657
29.9	0.034	0.731
30.1	0.034	0.735



Q [l/s]	K_D [m]	ΔH [m]
9.8	0.004	0.024
9.8	0.004	0.024
13.2	0.007	0.086
13.4	0.007	0.080
16.3	0.01	0.155
16.4	0.01	0.160
19	0.014	0.235
19.2	0.014	0.237
21.3	0.017	0.299
21.6	0.018	0.303
23.3	0.021	0.374
23.3	0.021	0.369
25.2	0.024	0.444
25.2	0.024	0.443
26.8	0.027	0.510
26.8	0.027	0.515
28.1	0.03	0.570
28.2	0.03	0.575
30	0.034	0.662
30	0.034	0.656

Orifice : **EXP_932**

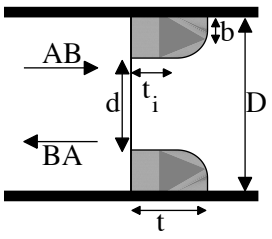
Type : Rounded orifices

Head loss coefficients

k_{AB}	21.3 ±0.30
k_{BA}	8.4 ±0.30
λ	0.39

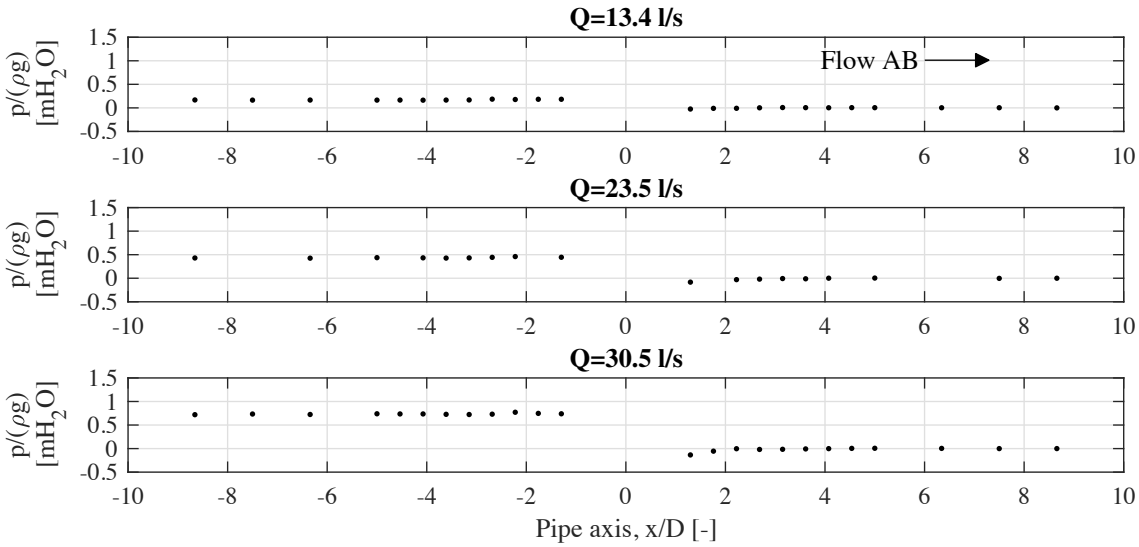
Jet length

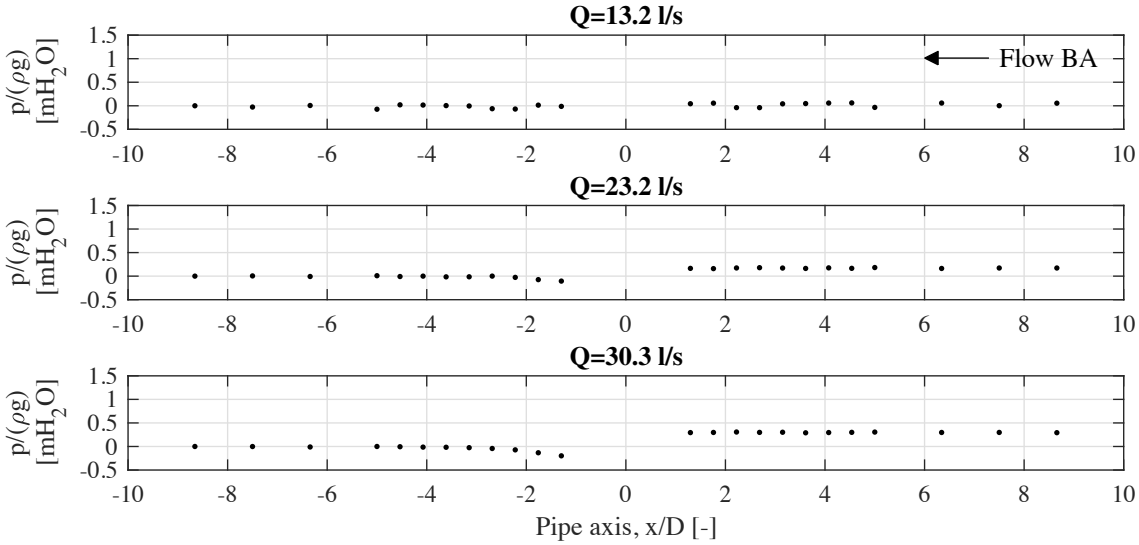
$L_{j,AB}$	3.28
$L_{j,BA}$	4.28

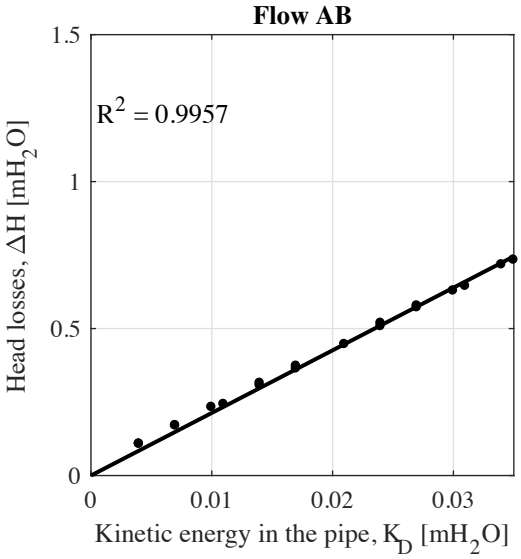


Geometrical parameters

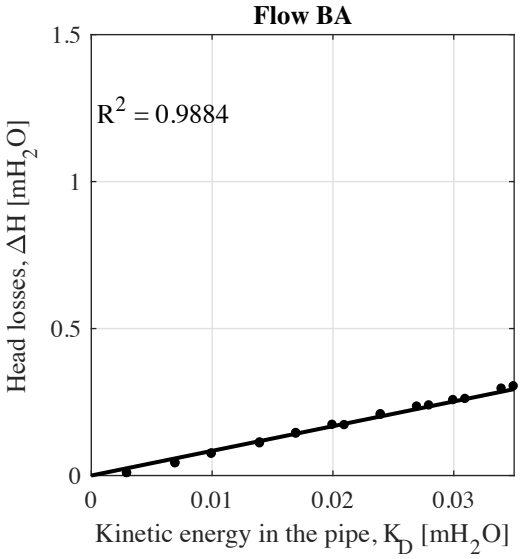
d	108	[mm]	β	*0.495*	*[-]*
t	43.0	[mm]	α	*0.199*	*[-]*
t_i	21.5	[mm]	α_i	*0.099*	*[-]*
			θ	45	*[deg]*







Q [l/s]	K_D [m]	ΔH [m]
9.9	0.004	0.107
9.9	0.004	0.107
13.4	0.007	0.169
13.5	0.007	0.170
16.3	0.010	0.232
16.7	0.011	0.242
19.1	0.014	0.306
19.2	0.014	0.314
21.1	0.017	0.363
21.3	0.017	0.372
23.5	0.021	0.446
25.1	0.024	0.507
25.4	0.024	0.518
26.8	0.027	0.571
26.9	0.027	0.577
28.2	0.030	0.628
28.5	0.031	0.644
30.0	0.034	0.717
30.5	0.035	0.733



Q [l/s]	K_D [m]	ΔH [m]
9.5	0.003	0.007
9.5	0.003	0.007
13.2	0.007	0.040
13.7	0.007	0.042
16.3	0.010	0.073
16.5	0.010	0.073
19.2	0.014	0.108
19.4	0.014	0.111
21.3	0.017	0.141
21.4	0.017	0.143
23.2	0.020	0.171
23.4	0.021	0.170
25.2	0.024	0.205
25.4	0.024	0.207
26.9	0.027	0.233
27.0	0.028	0.237
28.3	0.030	0.255
28.7	0.031	0.259
30.1	0.034	0.294
30.3	0.035	0.302